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Polypeptide Z_{wt}	Amino acid sequence	SEQ ID NO:
Z HER2 A	VDNKFENKEQQ NAFYEILHLP NLNNEEQRNAF IQSLKDDPSQ SANLAEAKK LNDAAQAPK	1
Z HER2 B	VDNKFENKEPK QAYWEIQLLP NLNTWITQSRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	2
Z HER2 C	VDNKFENKEPR TAYWEIVKL PNLNPQRRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	3
Z HER2 D	VDNKFENKEPR EAYWEIQLLP NLNKQKA AF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	4
Z HER2 :101	VDNKFENKEMR HAYWEIVKL PNLNPROKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	5
Z HER2 :102	VDNKFENKEMR KAYWEIVL PNLNRQSRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	6
Z HER2 :103	VDNKFENKEMR HAYWEIATLP NLNVNQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	7
Z HER2 :104	VDNKFENKEFR TAYWEIVL PNLNPQI RAAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	8
Z HER2 :105	VDNKFENKEFR TAYWEIVL PNLNTWQI RAAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	9
Z HER2 :106	VDNKFENKEPR KAYWEIAVLP NLNPQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	10
Z HER2 :107	VDNKFENKEPR KAYWEIAVLP NLNNQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	11
Z HER2 :108	VDNKFENKELR TAYWEIVGL PNLNHFQVRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	12
Z HER2 :109	VDNKFENKELR TAYWEIVL PNLNRWQI RAAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	13
Z HER2 :110	VDNKFENKEIR KAYWEIAVLP NLNMNMQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	14
Z HER2 :112	VDNKFENKEFR TAYWEIVL PNLNREQGRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	15
Z HER2 :113	VDNKFENKEMR TAYWEIATLP NLNWQI RAAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	16
Z HER2 :114	VDNKFENKEFR NAYWEIVL PNLNNRQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	17
Z HER2 :115	VDNKFENKEFR NAYWEIAKLP NLNNNGQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	18
Z HER2 :116	VDNKFENKEFR QAYWEIAVLP NLNHSQT RAAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	19
Z HER2 :118	VDNKFENKEPR HAYWEIVKL PNLNSLQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	20
Z HER2 :120	VDNKFENKELR TAYWEIVGL PNLNSRQSRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	21
Z HER2 :121	VDNKFENKELR TAYWEIAGL PNLNPQKRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	22
Z HER2 :122	VDNKFENKEMR KAYWEITQLP NLNTROTQRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	23
Z HER2 :123	VDNKFENKEFR KAYWEIVL PNLNWEQNRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	24
Z HER2 :124	VDNKFENKEFR KAYWEITQLP NLNREQNRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	25
Z HER2 :125	VDNKFENKEMR HAYWEIATLP NLNTINQSRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	26
Z HER2 :126	VDNKFENKEMR NAYWEIVL PNLNRWQSRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	27
Z HER2 :127	VDNKFENKEMR NAYWEIVL PNLNRWQSRAF IRSLYDDPSQ SANLLAEAKK LNDAAQAPK	28

FIGURE 1

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Polypeptide	Amino acid sequence	SEQ ID NO:
Z HER2 : 129	VDNKFNKELR NAYWEIVKLP NLNPWQHRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	30
Z HER2 : 130	VDNKFNKKEFR TAXWEIVKLP NLNVROSRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	31
Z HER2 : 133	VDNKFNKENR TAYWEIVKLP NLNDYQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	32
Z HER2 : 135	VDNKFNKKEFR TAYWEITQLP NLNRLOSRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	33
Z HER2 : 137	VDNKFNKENR TAYWEIAGLP NLNAQQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	34
Z HER2 : 138	VDNKFNKEMR QAYWEIVRLP NLNAQDQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	35
Z HER2 : 139	VDNKFNKEMR NAYWEIVTLP NLNKTOSRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	36
Z HER2 : 140	VDNKFNKEMR QAYWEIVQLP NLNPQGSRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	37
Z HER2 : 148	VDNKFNKEMR TAYWEIVLPLP NLNMWQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	38
Z HER2 : 153	VDNKFNKEMR KAYWEIAALLP NLNKWQSRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	39
Z HER2 : 158	VDNKFNKEMR KAYWEIAALLP NLNRWQIRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	40
Z HER2 : 159	VDNKFNKEMR QAYWEIVTLP NLNRWQIRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	41
Z HER2 : 162	VDNKFNKELR KAYWEIVGLP NLNREQNRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	42
Z HER2 : 165	VDNKFNKEMR TAYWEIVLPLP NLNNQQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	43
Z HER2 : 167	VDNKFNKKEFR HAYWEIVLPLP NLNAGQHRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	44
Z HER2 : 168	VDNKFNKELR KAYWEIVTLP NLNPSQHRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	45
Z HER2 : 169	VDNKFNKEMR TAYWEIAKLPLP NLNPPQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	46
Z HER2 : 170	VDNKFNKELR TAYWEIVTLP NLNTSQTRAF NLNVROQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	47
Z HER2 : 171	VDNKFNKELR KAYWEIQVLP NLNVAQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	48
Z HER2 : 172	VDNKFNKEP R QAYWEIVTLP NLNRFQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	49
Z HER2 : 177	VDNKFNKEMR NAYWEIVGLP NLNQGQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	50
Z HER2 : 178	VDNKFNKEMR NAYWEIVKLP NLNSNSQRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	51
Z HER2 : 179	VDNKFNKENR TAYWEIVRPLP NLNSAQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	52
Z HER2 : 180	VDNKFNKEMR NAYWEIVTLP NLNRWQSRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	53
Z HER2 : 205	VDNKFNKEMR TAYWEIVTLP NLNVAQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	54
Z HER2 : 207	VDNKFNKEMR NAYWEIAALLP NLNVAQKRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	55
Z HER2 : 209	VDNKFNKKEFR QAYWEIVKLP NLNSGQHRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	56
Z HER2 : 222	VDNKFNKEMR TAYWEIVKLP NLNTAQNRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	57
Z HER2 : 223	VDNKFNKELR TAYWEIVSLP NLNRNOSRRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	58
Z HER2 : 225	VDNKFNKEMR NAYWEIVKLP NLNPQGSRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	59
Z HER2 : 226	VDNKFNKEMR NAYWEIVKLP NLNPQGSRAF IRSLYDDPSQ SANLLAEAKK LNDQAQPK	60

FIGURE 1

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Polyptide	Amino acid sequence	SEQ ID NO:
Z_HER2:227	VDNKENKEMR QAYWEIALLP NLNRMQIYRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	61
Z_HER2:229	VDNKENKEFR TAYWEIAVLP NLNQNQQRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	62
Z_HER2:230	VDNKFNKECR TAYWEIVKLP NLNNAQQRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	63
Z_HER2:232	VDNKFNKEPK TAYWEIVVLP NLN SKQRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	64
Z_HER2:233	VDNKFNKEMR NAYWEIVTLP NLNKWQIYRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	65
Z_HER2:234	VDNKFNKEMR KAYWEIATLP NLNKSQSRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	66
Z_HER2:235	VDNKFNKEFR TAYWEIVTLP NLNVGQTRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	67
Z_HER2:236	VDNKFNKELR TAYWEIVGLP NLNTRQSRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	68
Z_HER2:237	VDNKFNKELR HAYWEIVQLP NLNREQGRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	69
Z_HER2:239	VDNKENKEMR HAYWEI IKLP NLN GQHRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	70
Z_HER2:240	VDNKENKEMR TAYWEIVSLP NLTNLQSRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	71
Z_HER2:261	VDNKFNKEMR KAYWEIQGLP NLNMRQKRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	72
Z_HER2:264	VDNKFNKEMR NAYWEIAKLP NLNREQQRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	73
Z_HER2:265	VDNKENKEMR HAYWEIVGLP NLNMTQQRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	74
Z_HER2:271	VDNKFNKELR NAYWEIVKLP NLNRAQMRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	75
Z_HER2:278	VDNKENKELR TAYWEI IKLP NLMNYQQRRAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	76
Z_HER2:0024*	VDNKFNKEPR EAYWEI QRLP NLMNKQKTAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	77
Z_HER2:0434	VDNKFNKEMY AAYWEI IDLP NLTNPQIHAF IRSLYDDPSQ SANLLAEAKK LNDAQAPK	78
Z_HER2:3053	VDNKFNKETR SAYWEIVNLP NLNQGQRHAF IKSLYDDPSQ SANLLAEAKK LNDAQAPK	79

FIGURE 1

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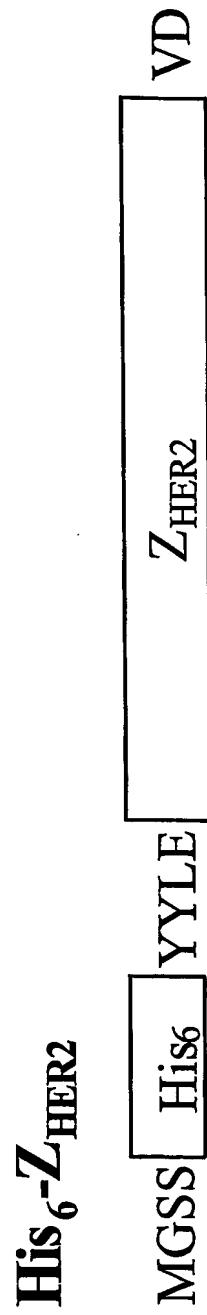
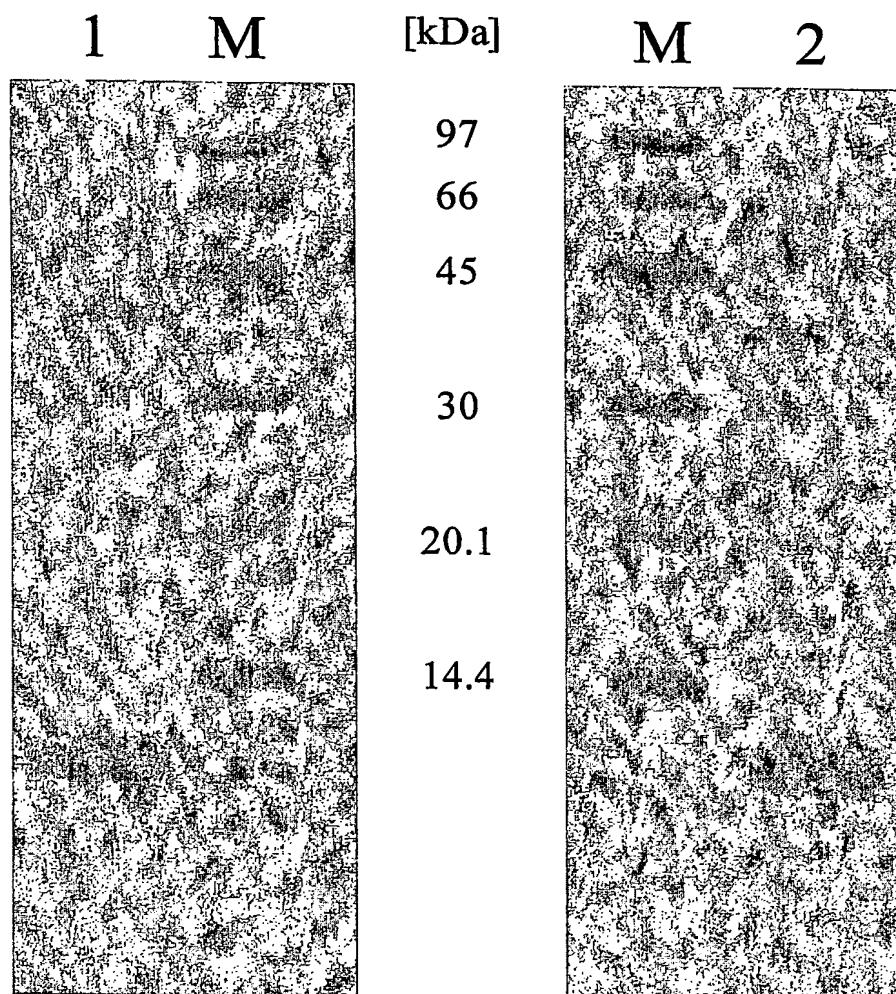


FIGURE 2

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**FIGURE 3**

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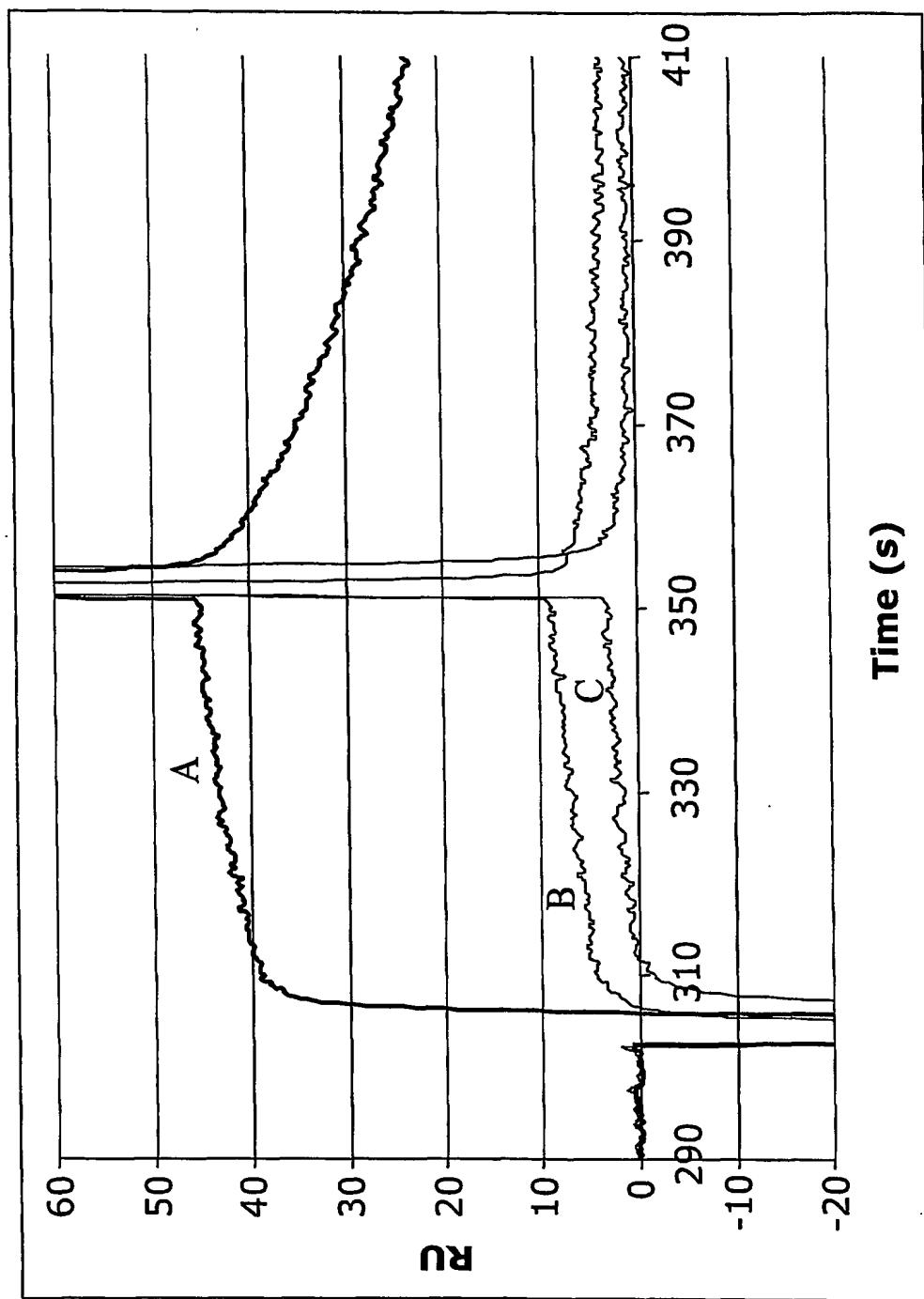


FIGURE 4

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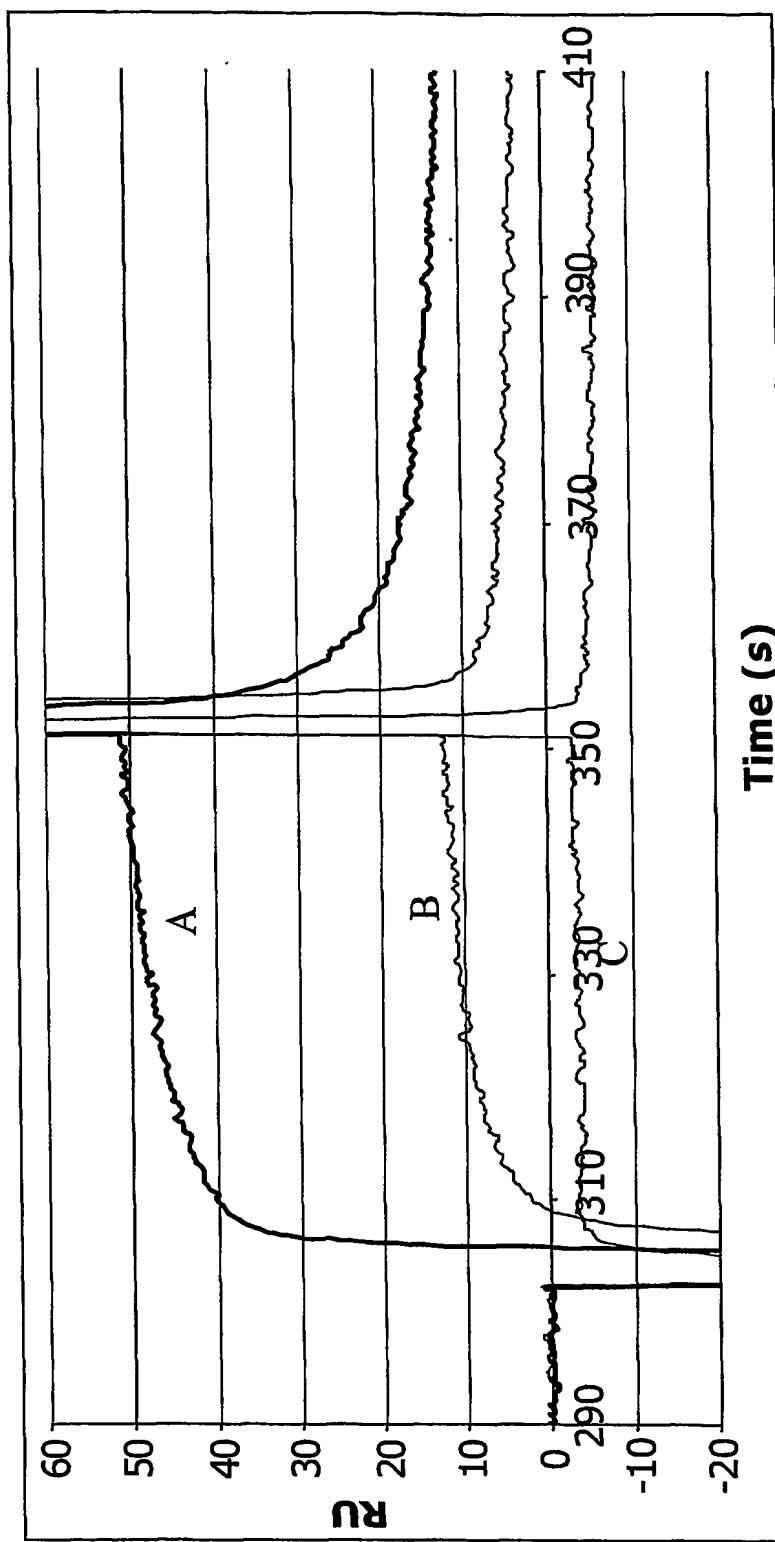


FIGURE 5

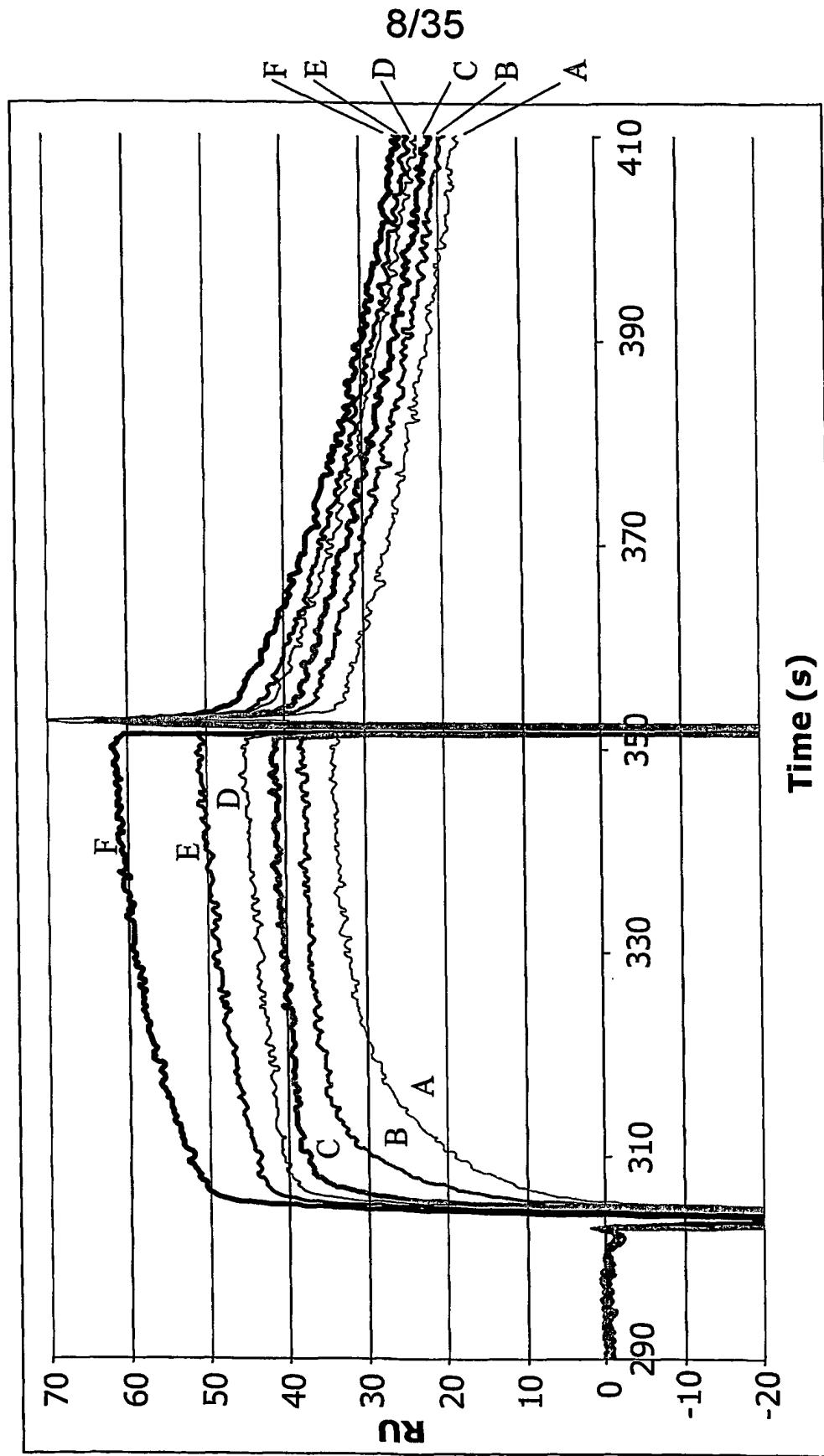


FIGURE 6

SUBSTITUTE SHEET (RULE 26)

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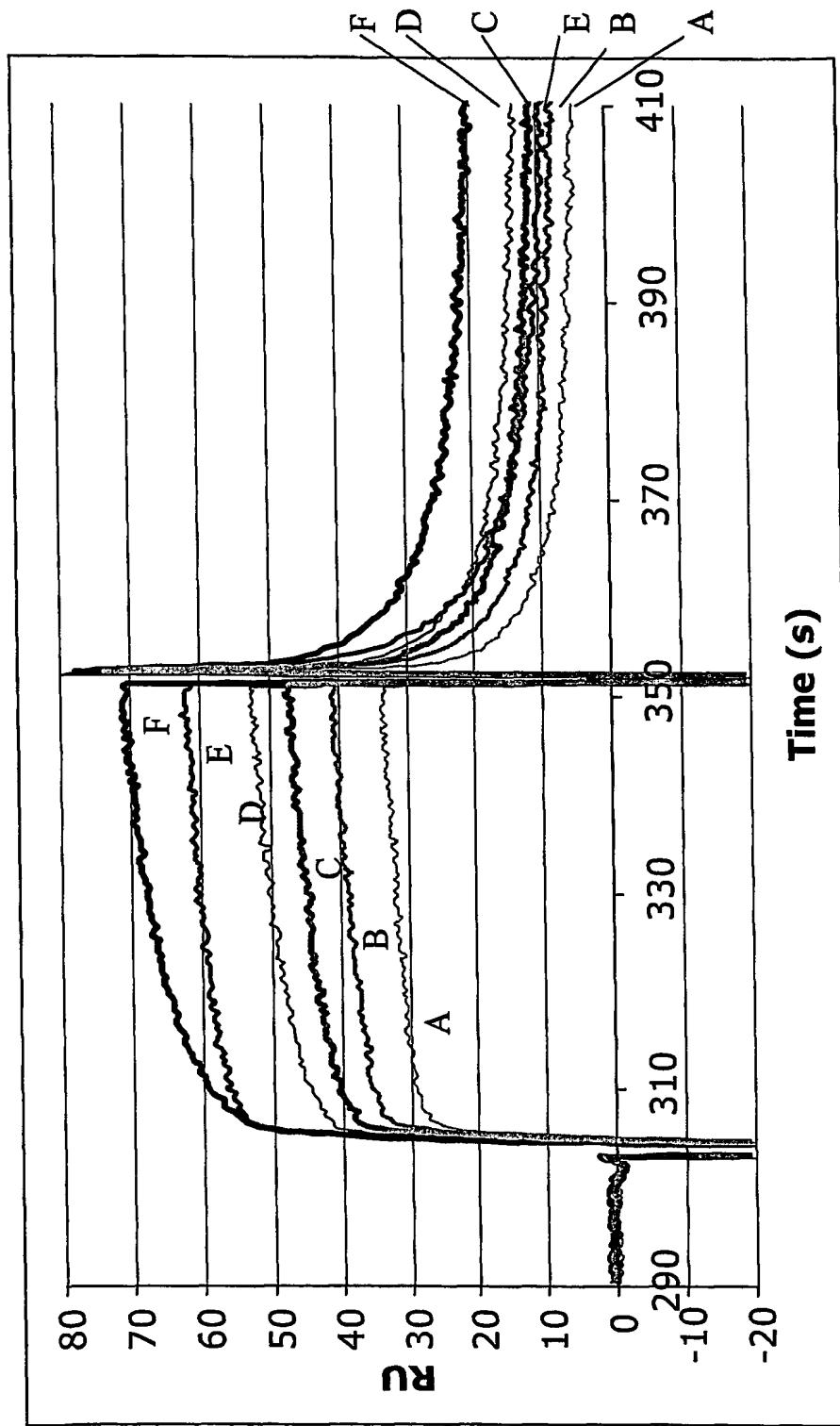


FIGURE 7

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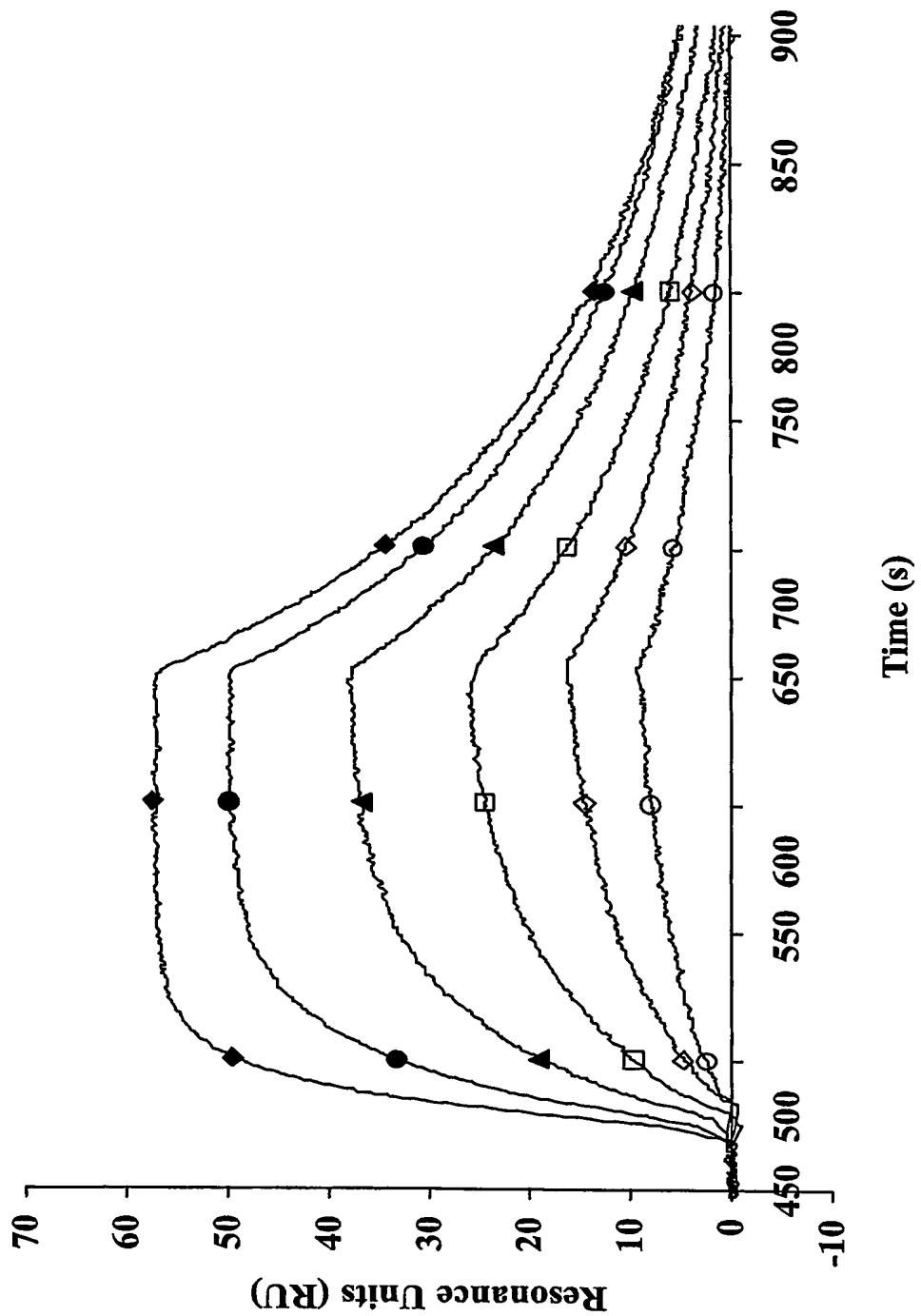


FIGURE 8A

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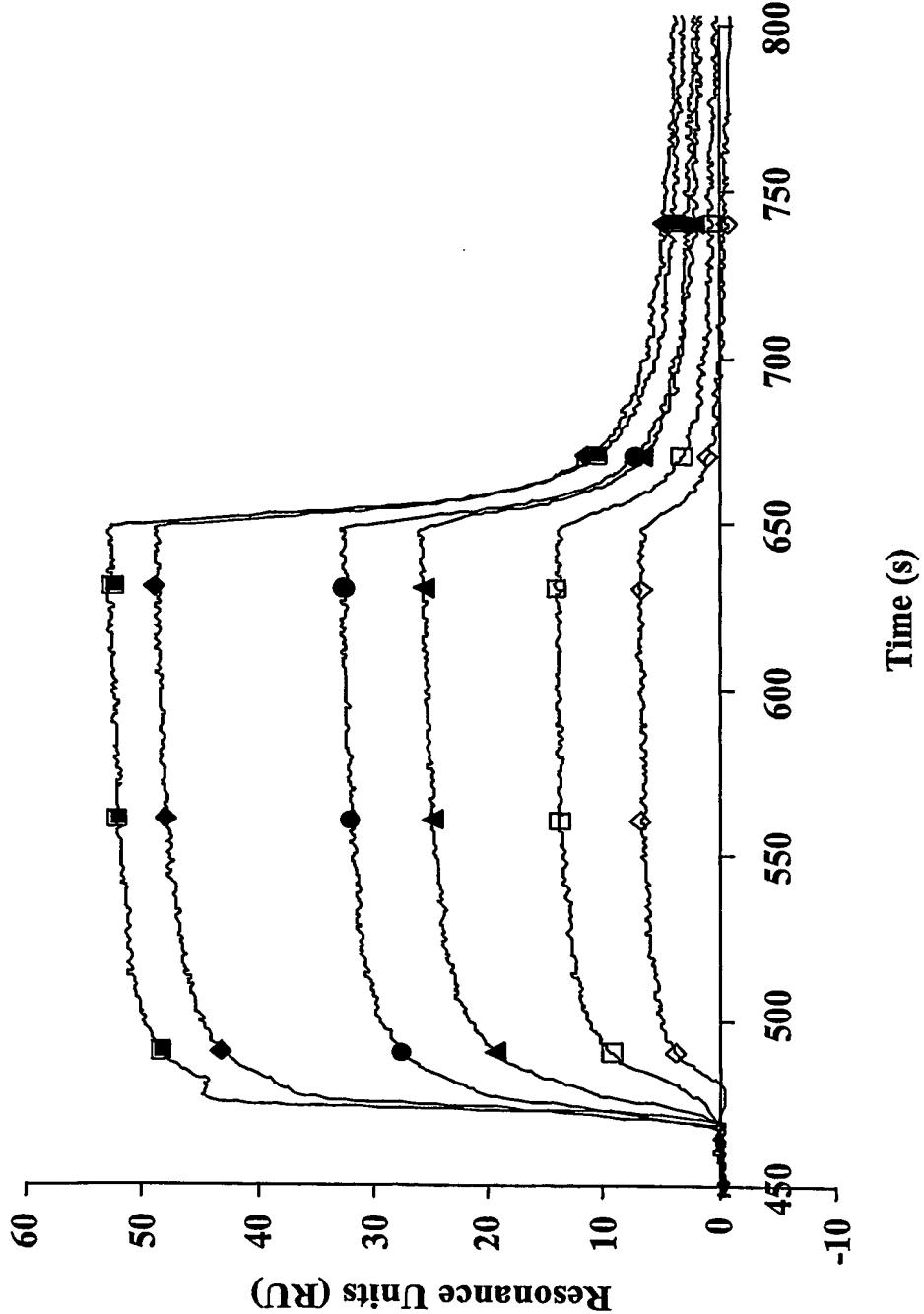


FIGURE 8B

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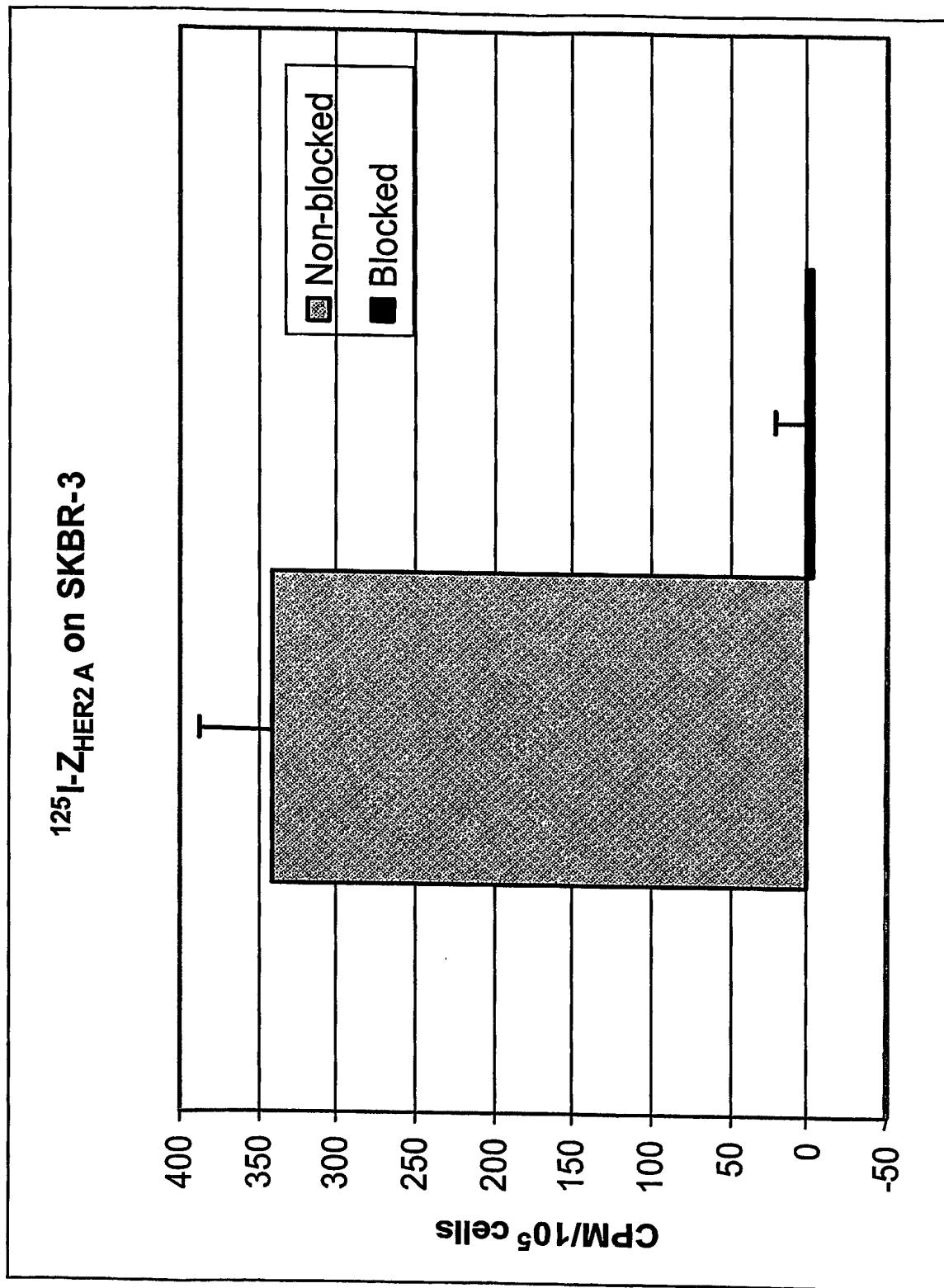


FIGURE 9

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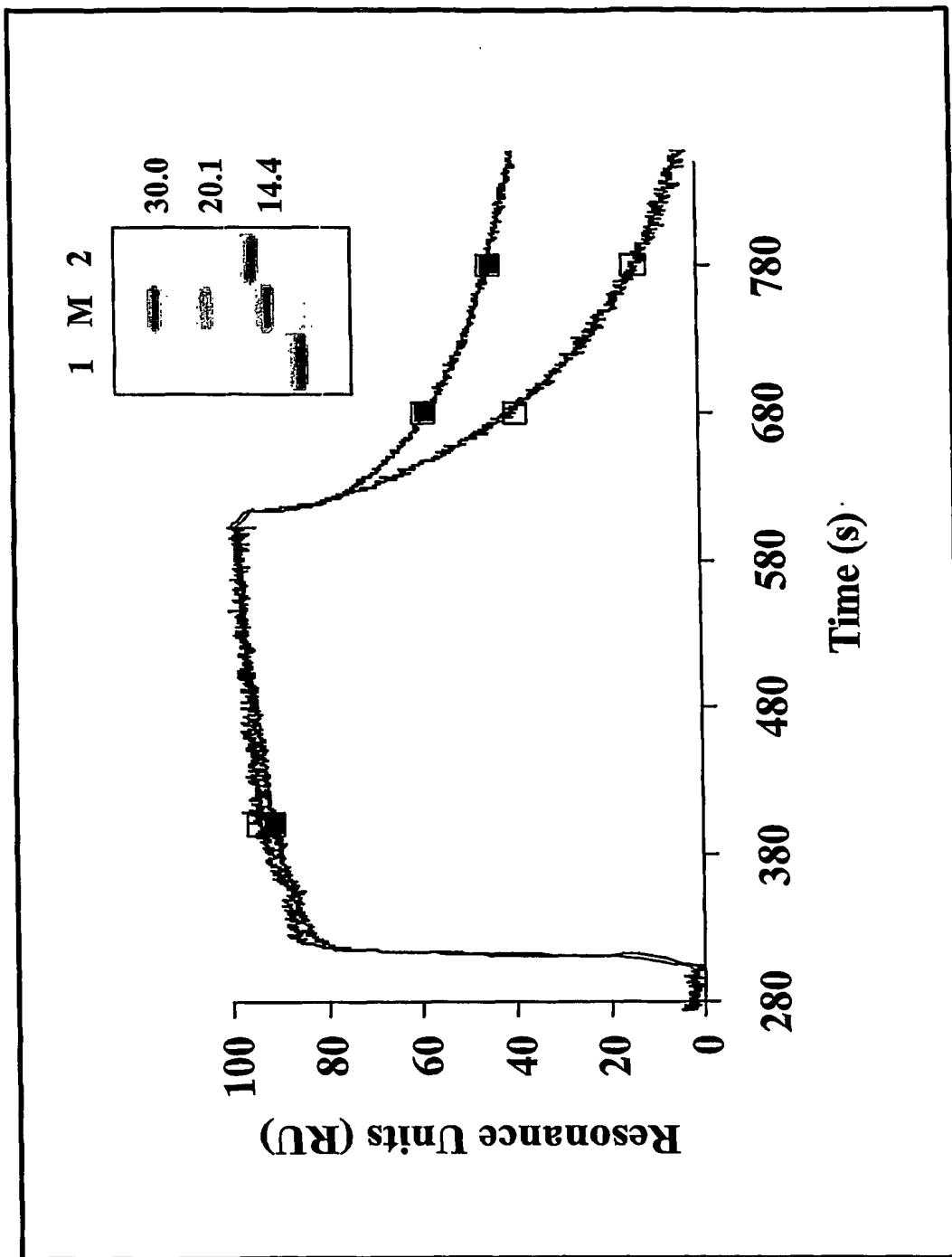


FIGURE 10

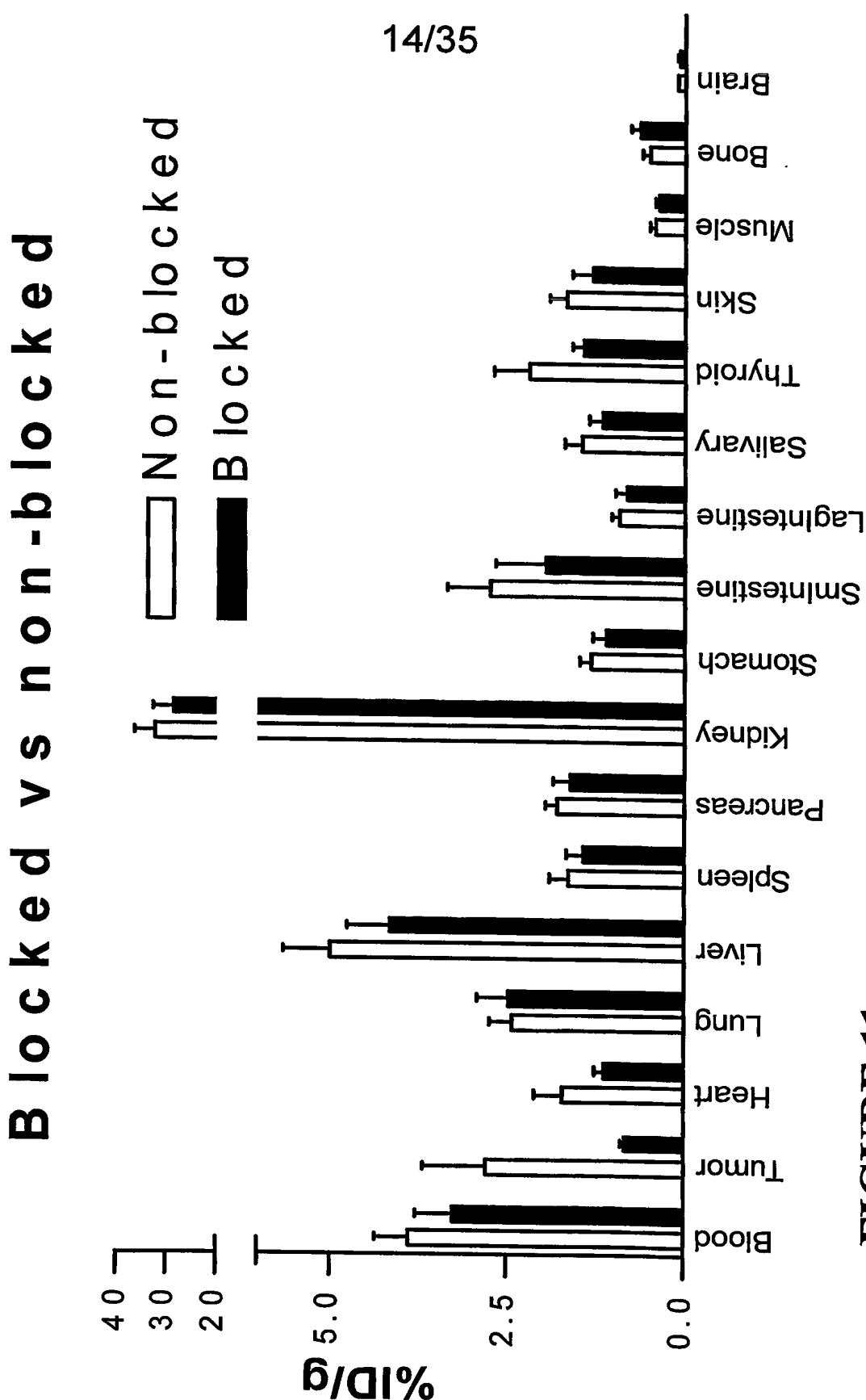


FIGURE 11

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Specific vs unspecific affinity

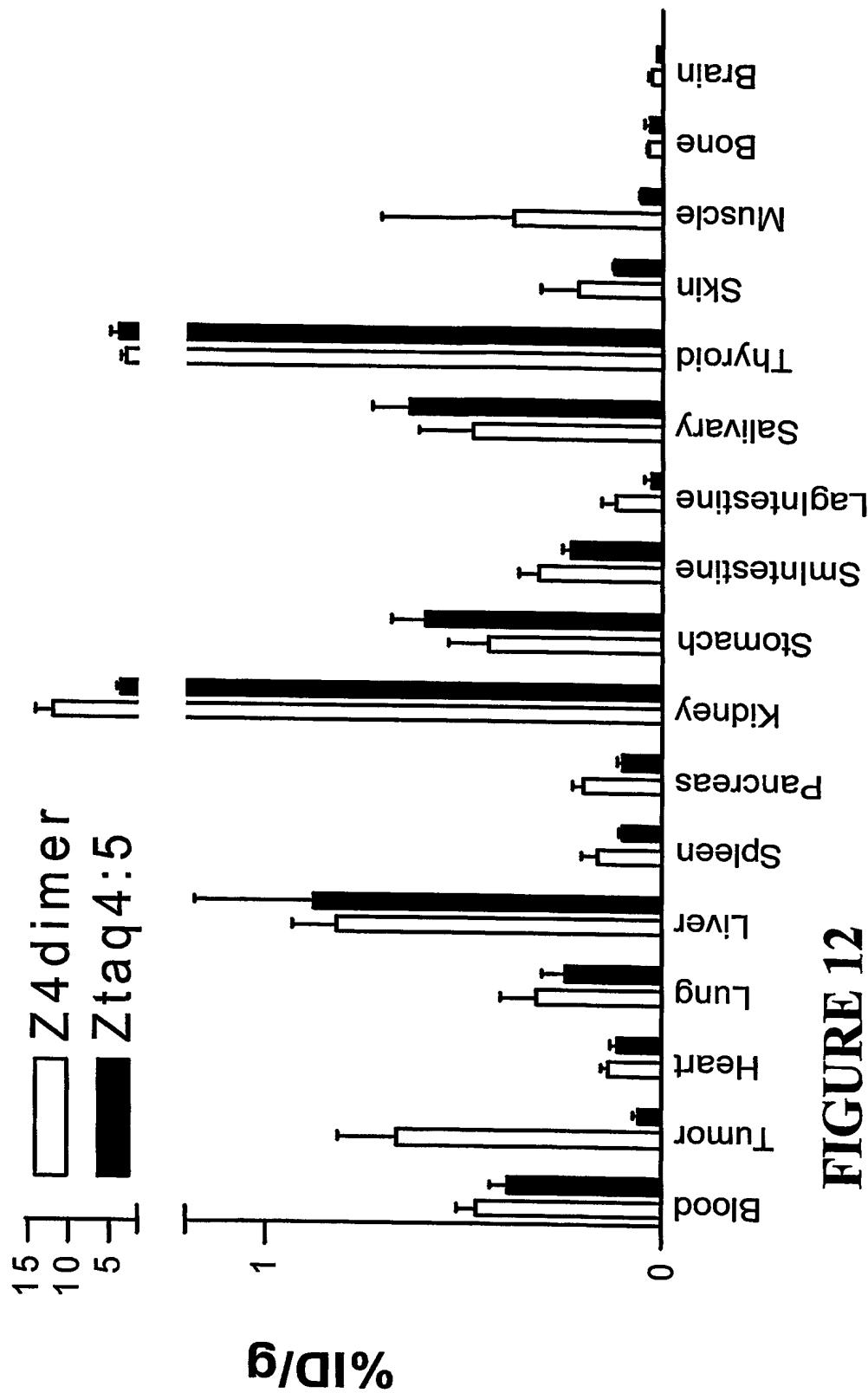
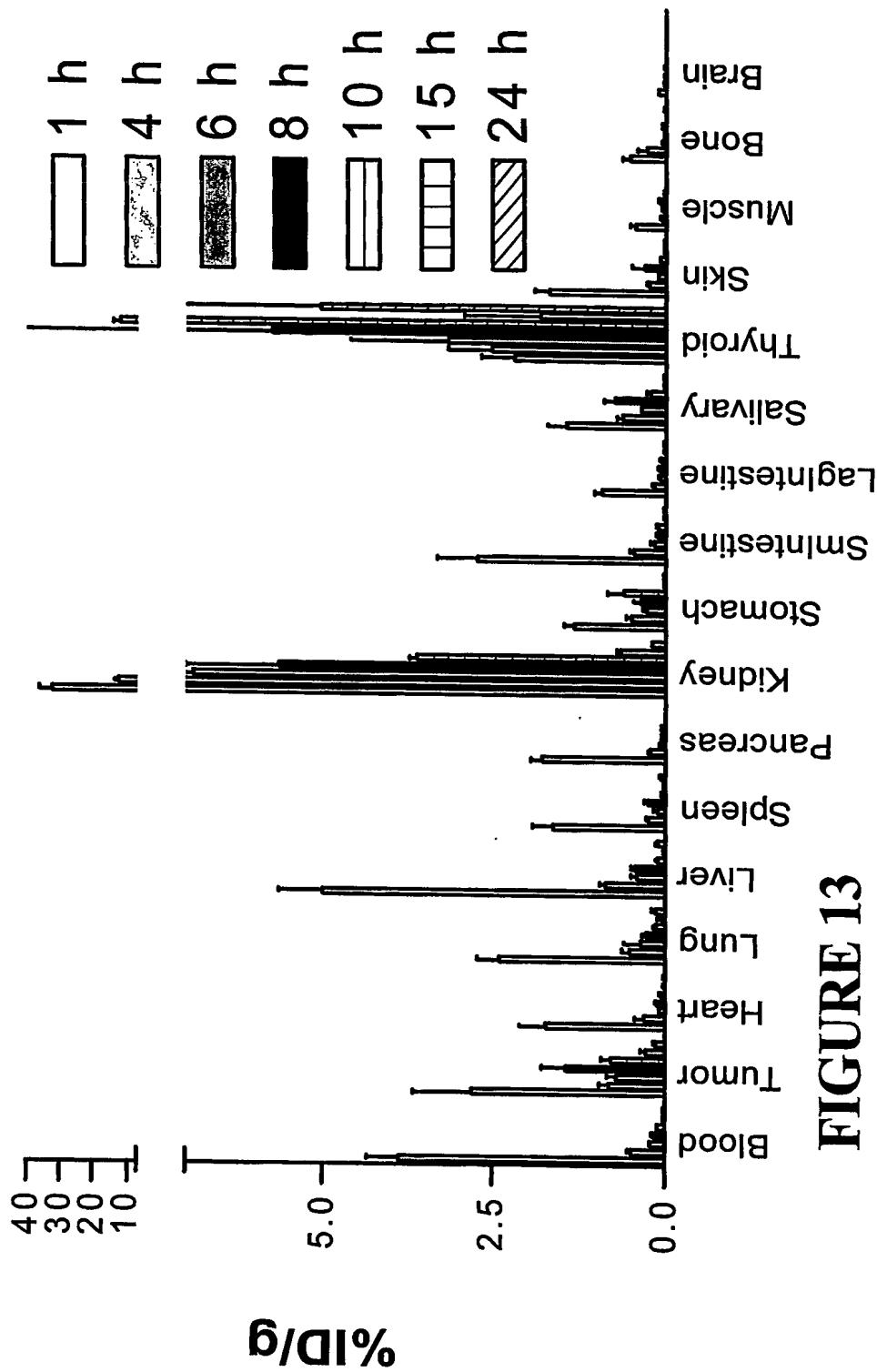


FIGURE 12

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Biodistribution, combined data**FIGURE 13**

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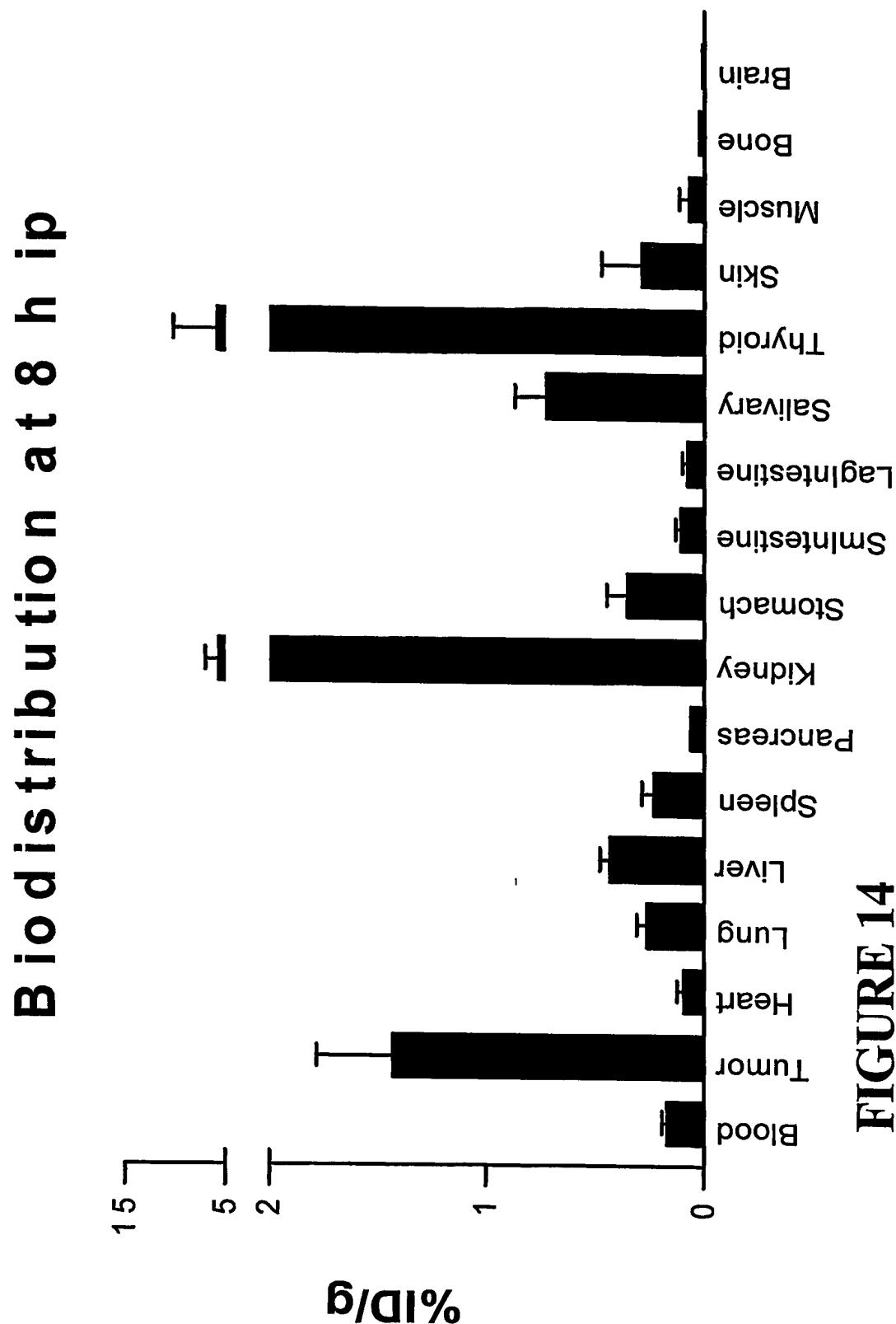
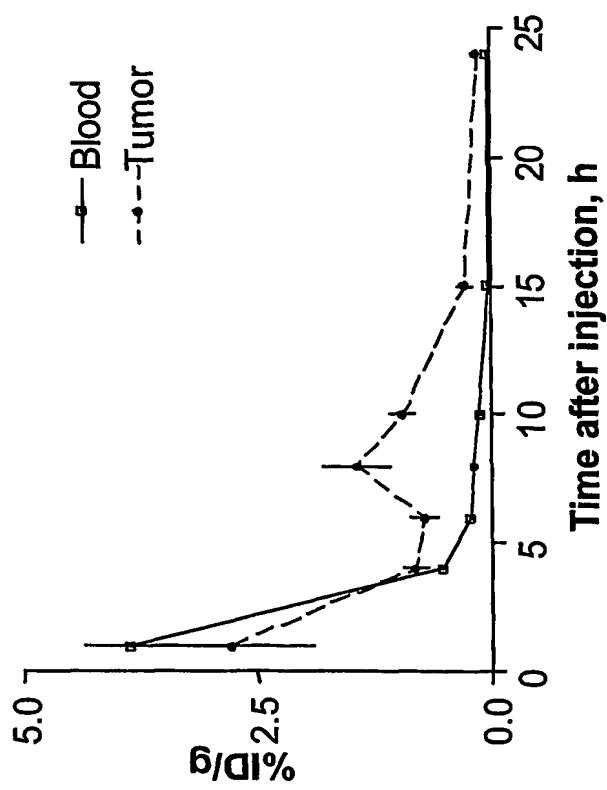


FIGURE 14

A: Blood and tumor, combined data



B: Blood and tumor, analysis

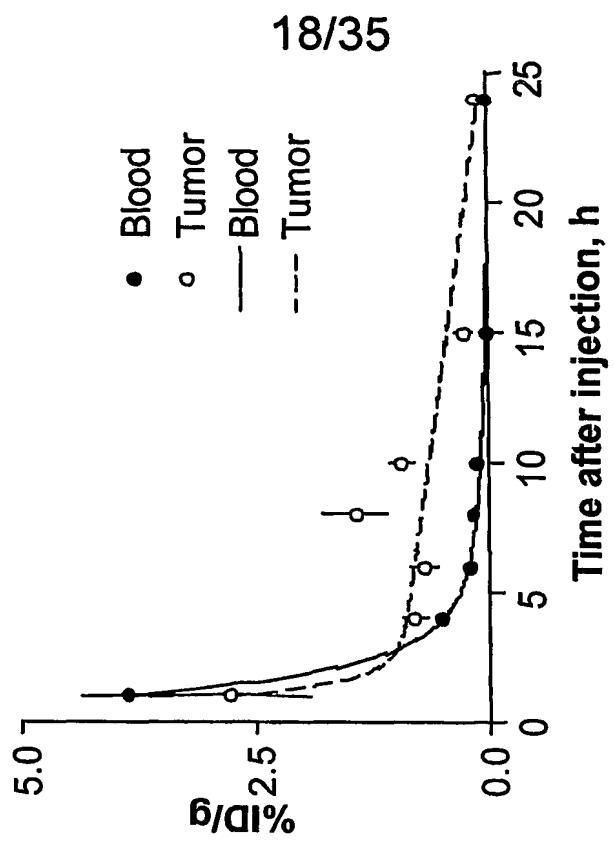
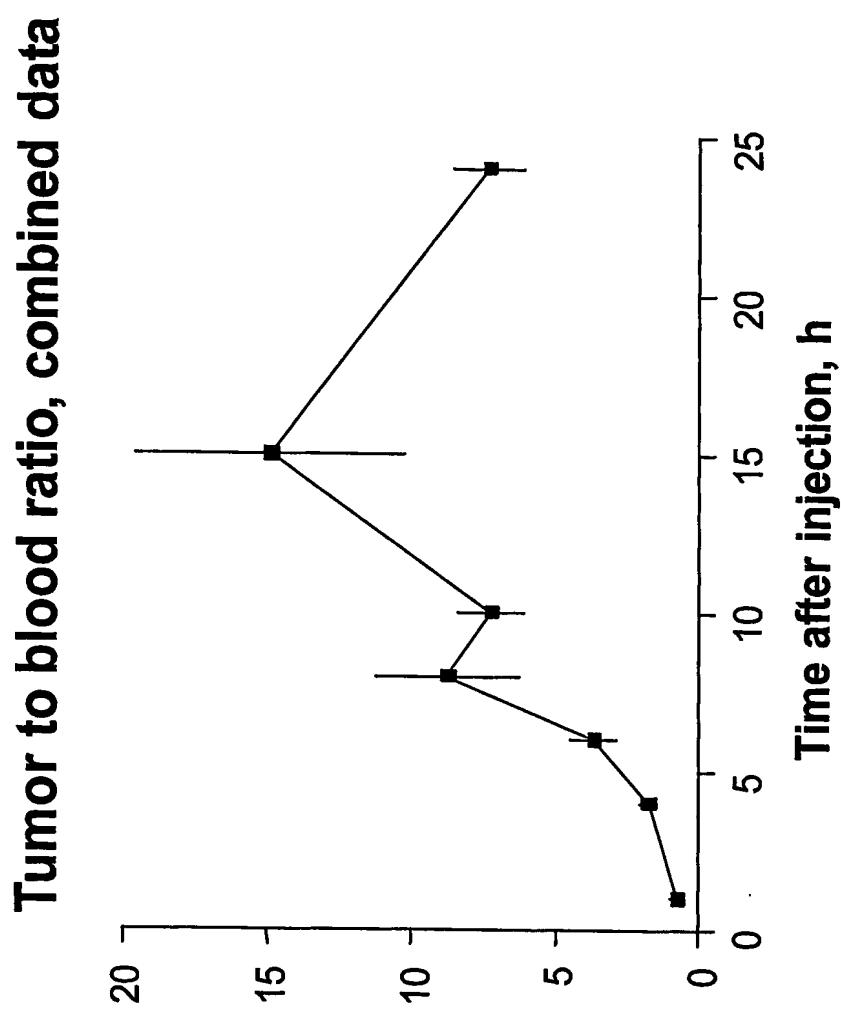


FIGURE 15

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**FIGURE 16**

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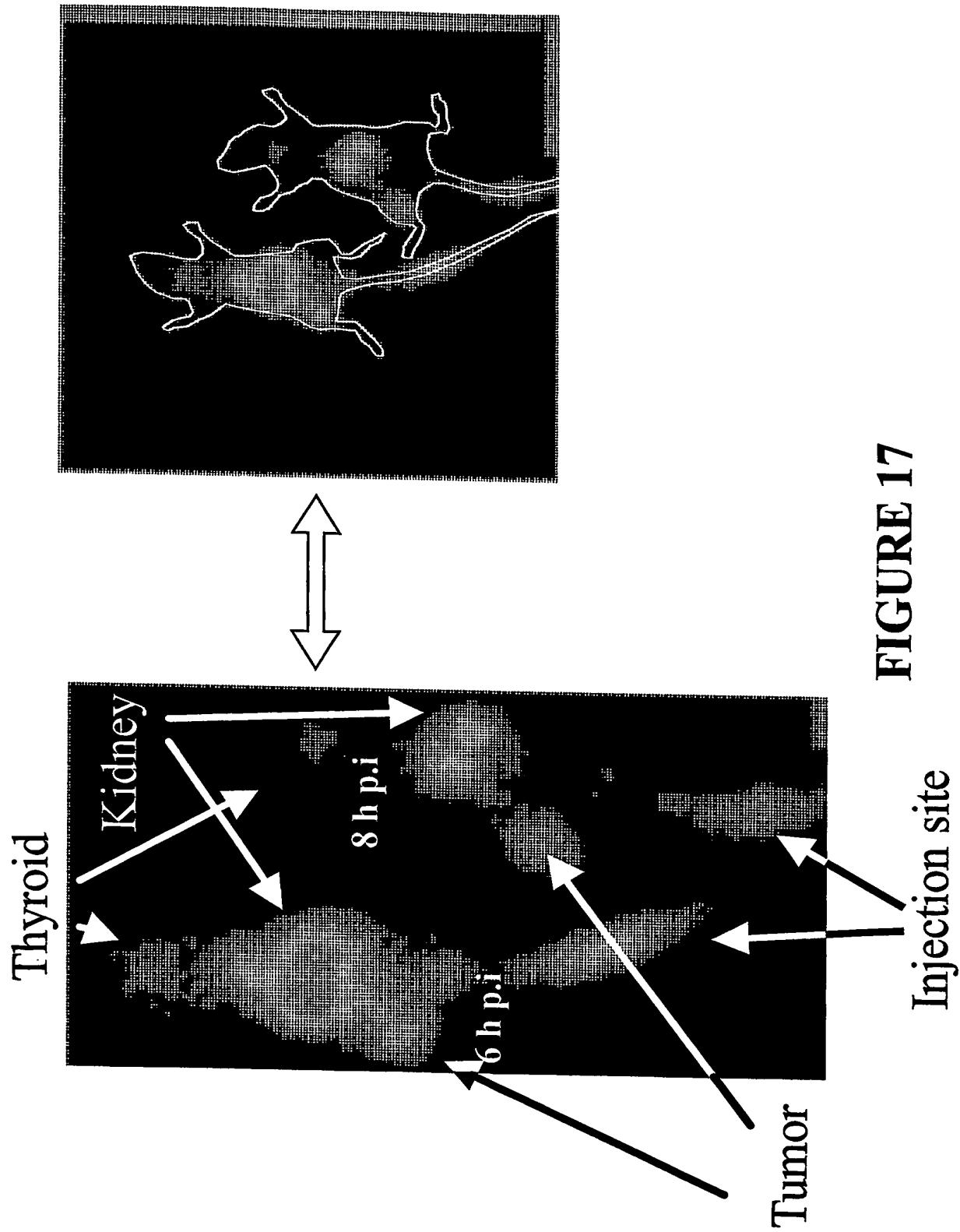


FIGURE 17

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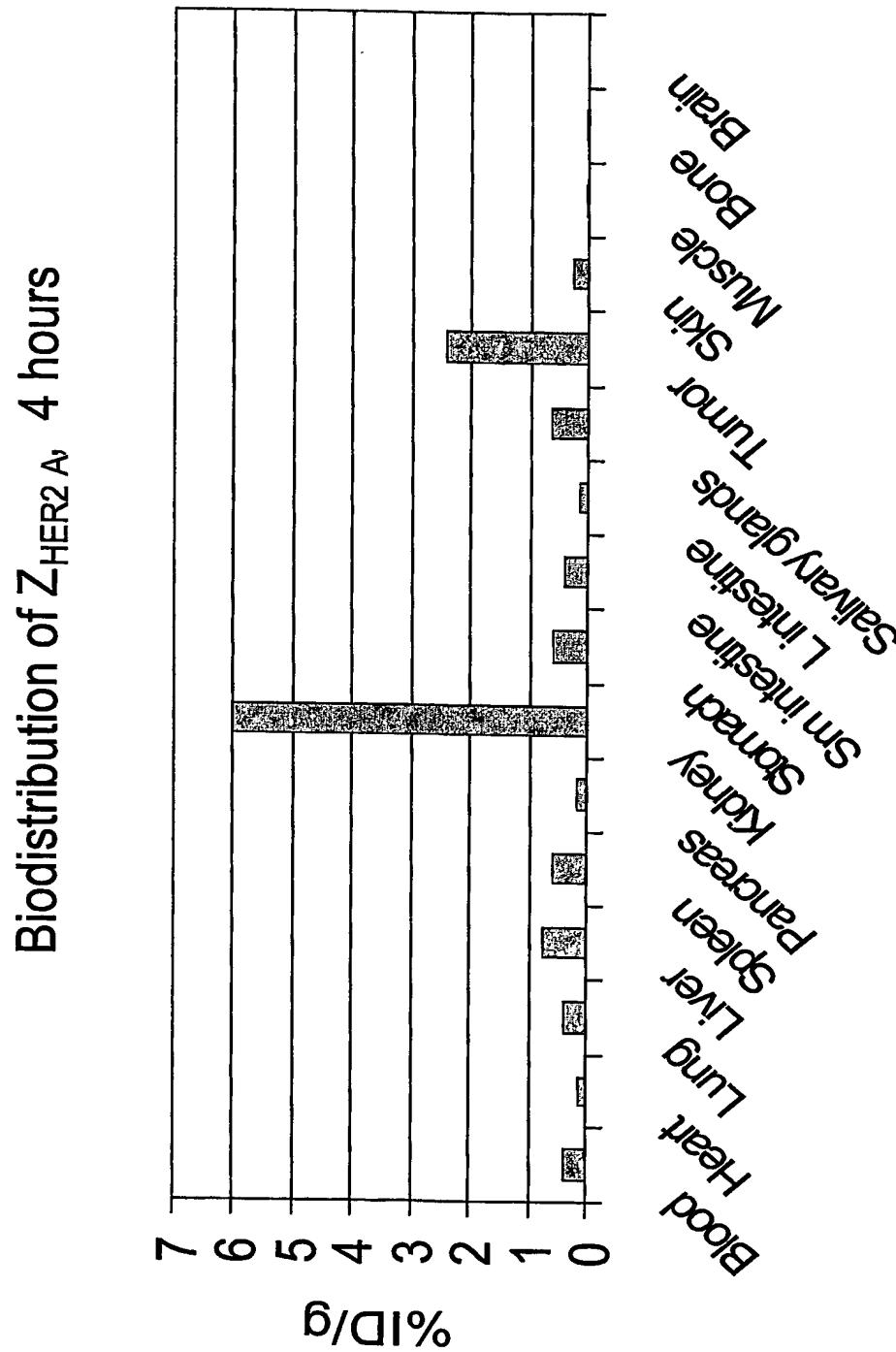


FIGURE 18

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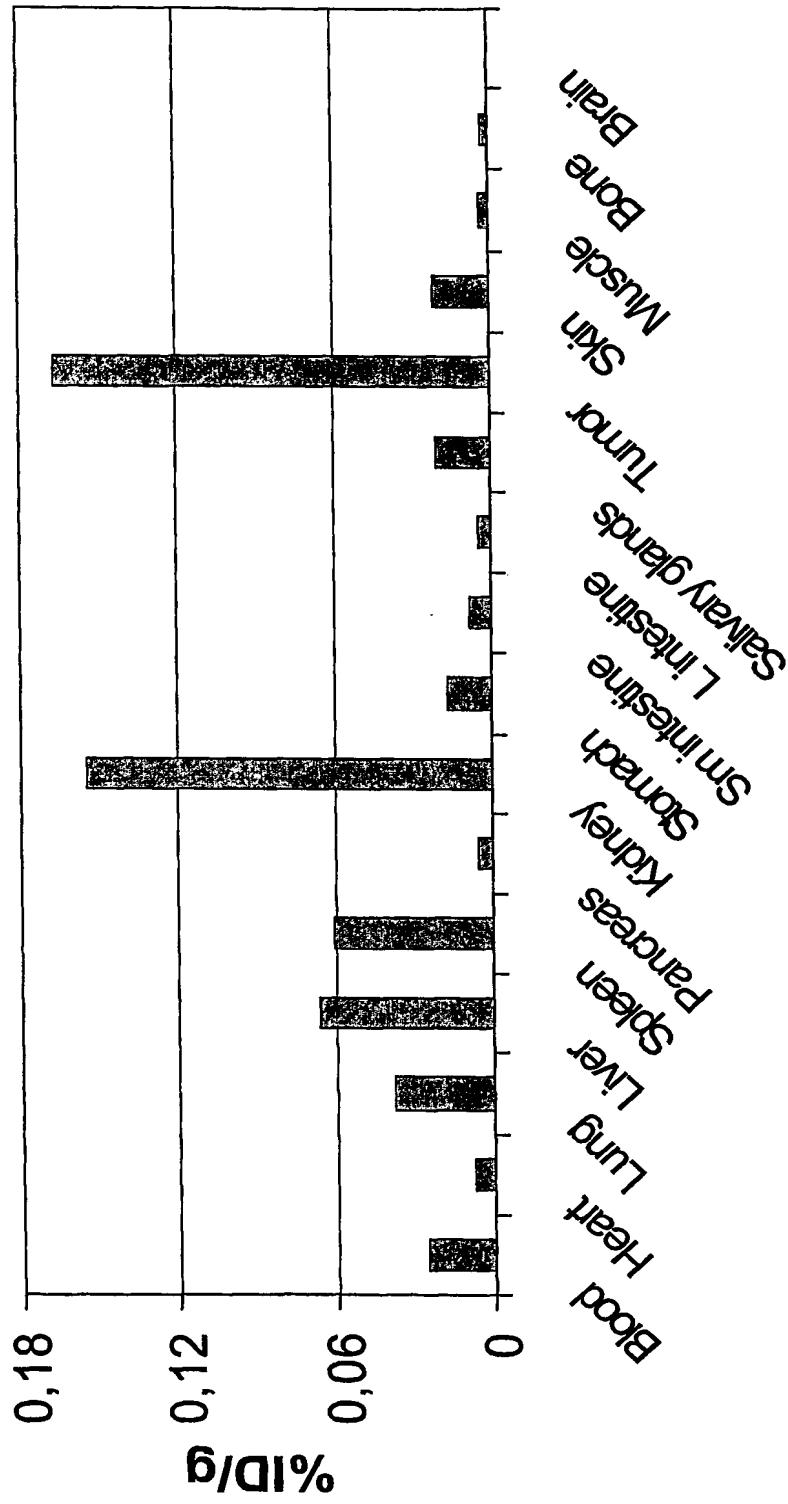
Biodistribution of Z_{HER2 A} 24 hours

FIGURE 1.9

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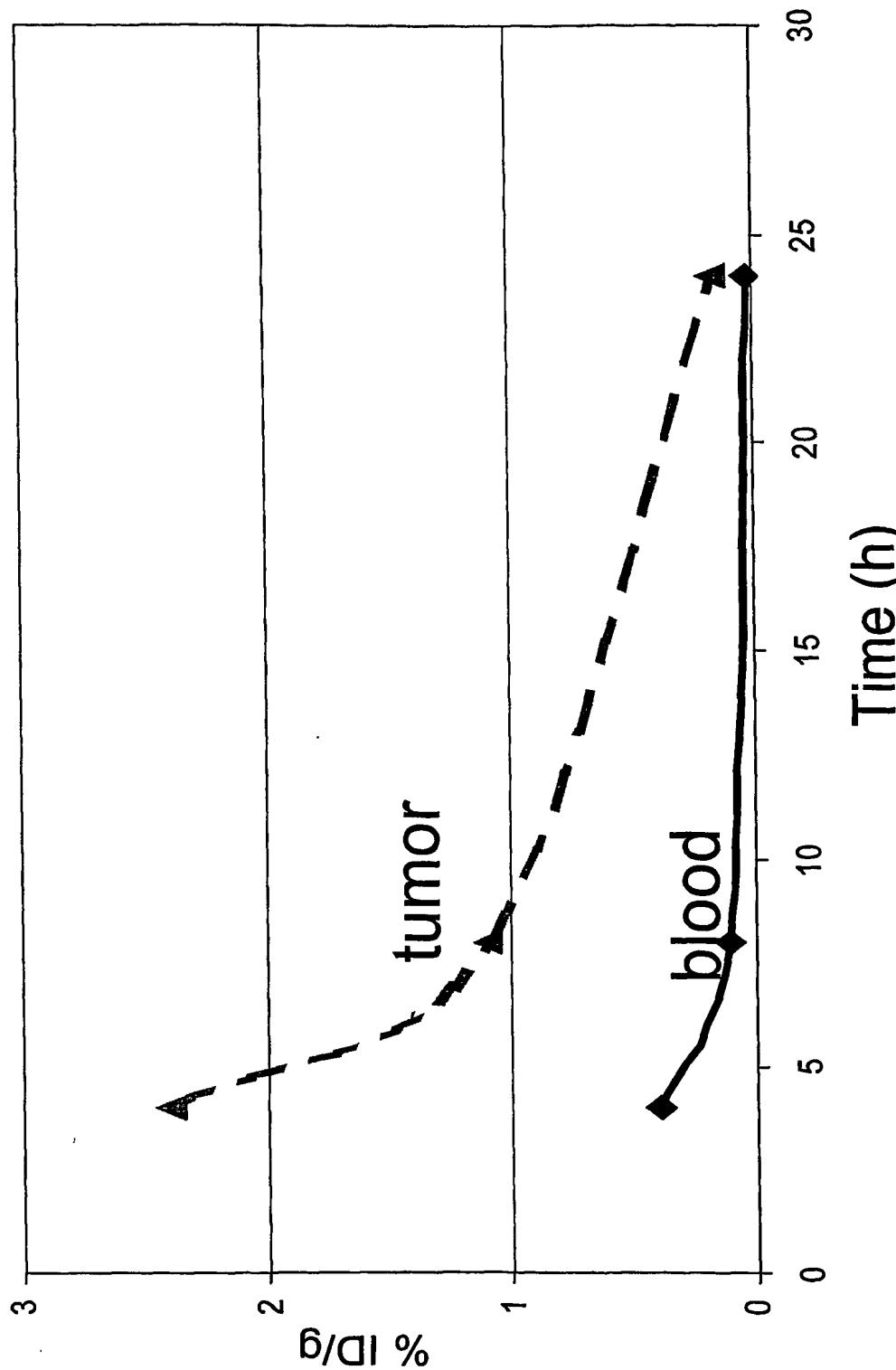


FIGURE 20

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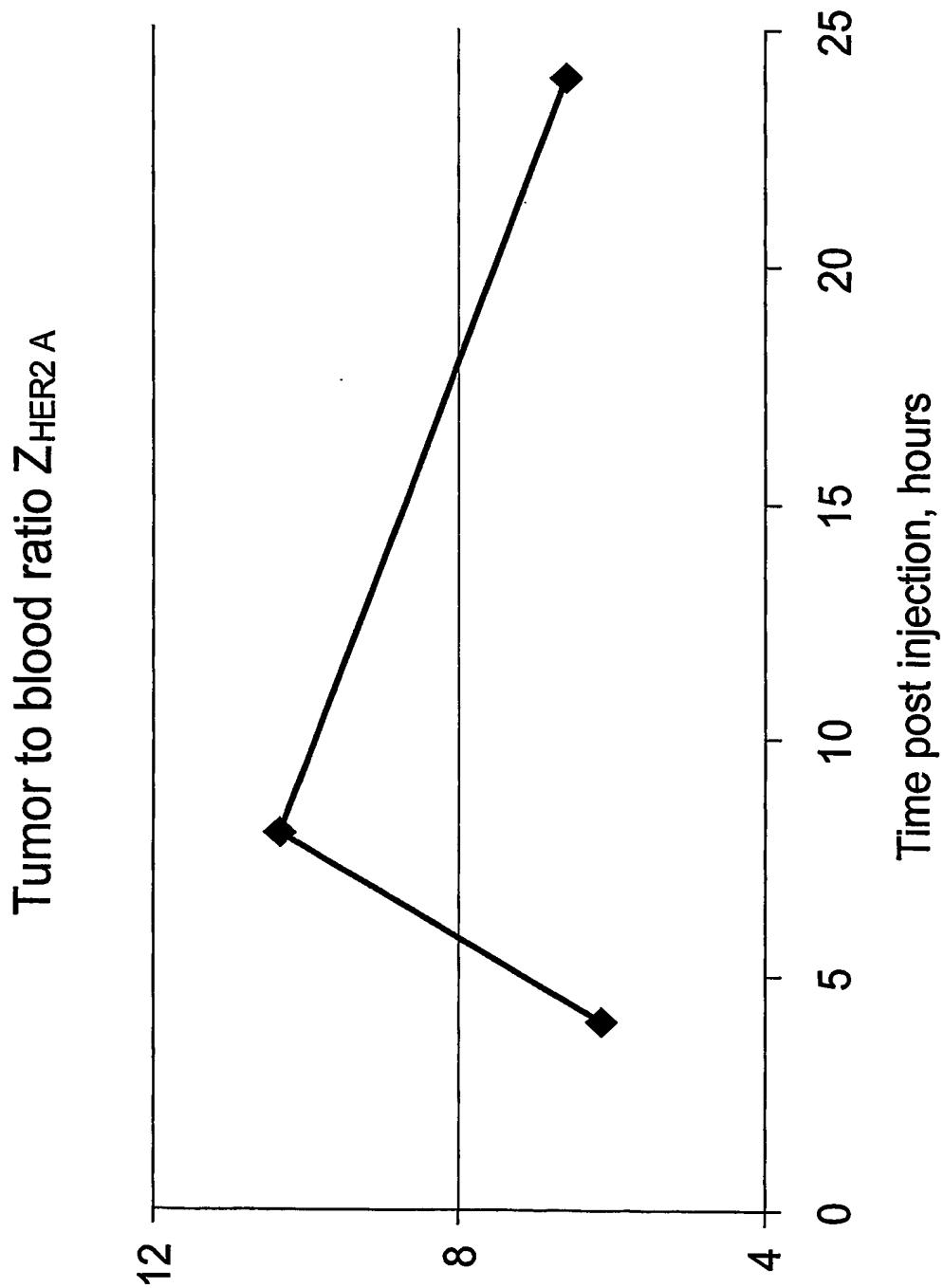


FIGURE 21

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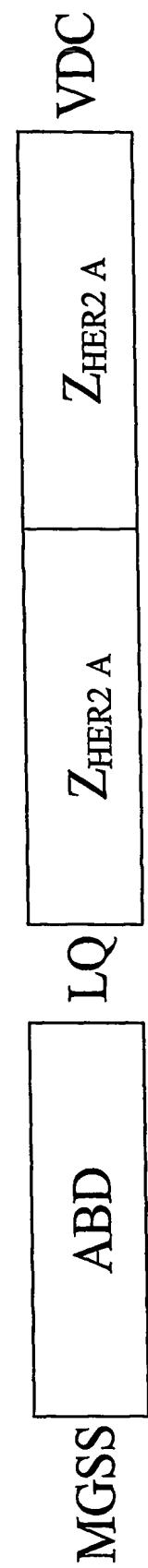


FIGURE 22

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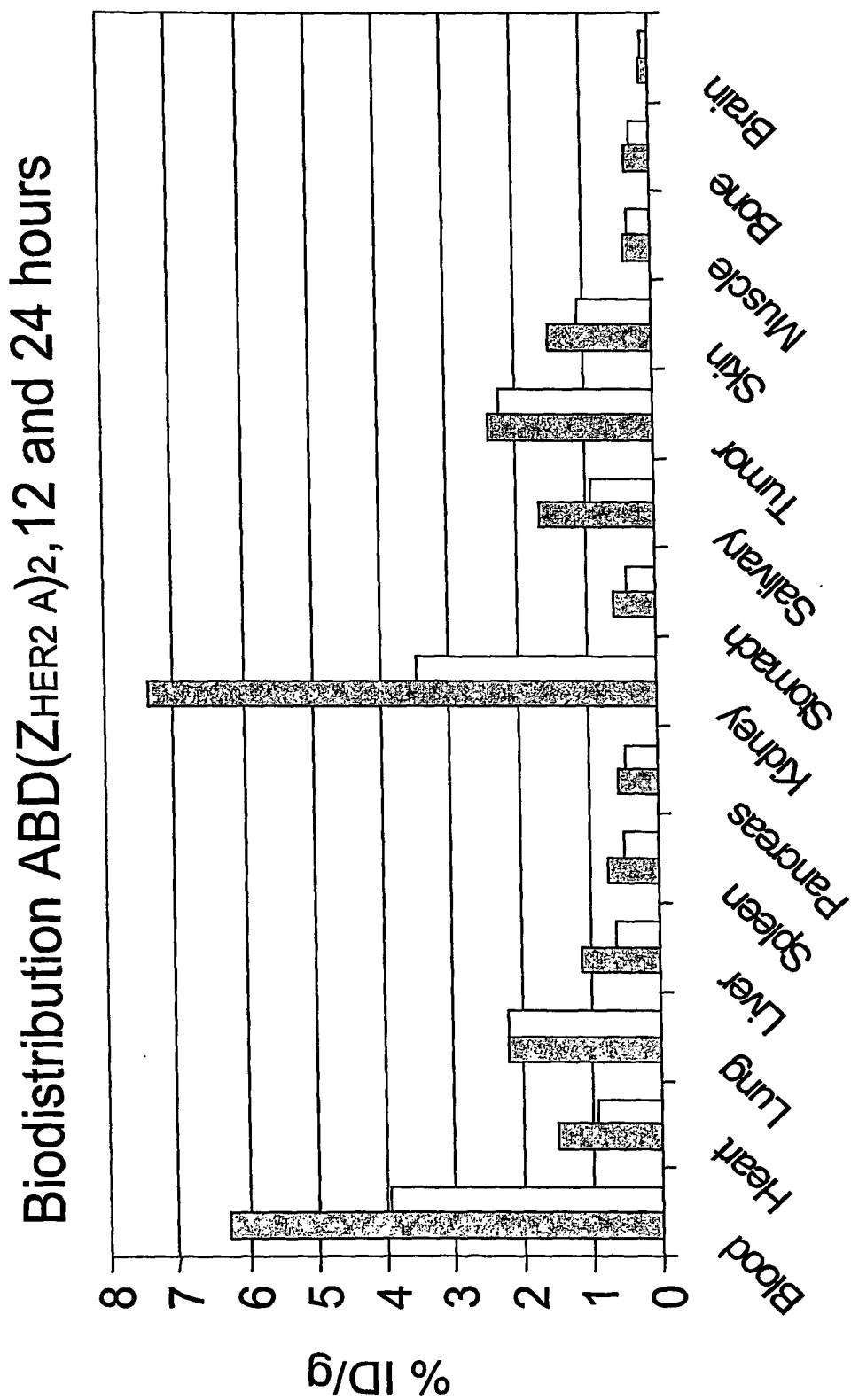


FIGURE 23

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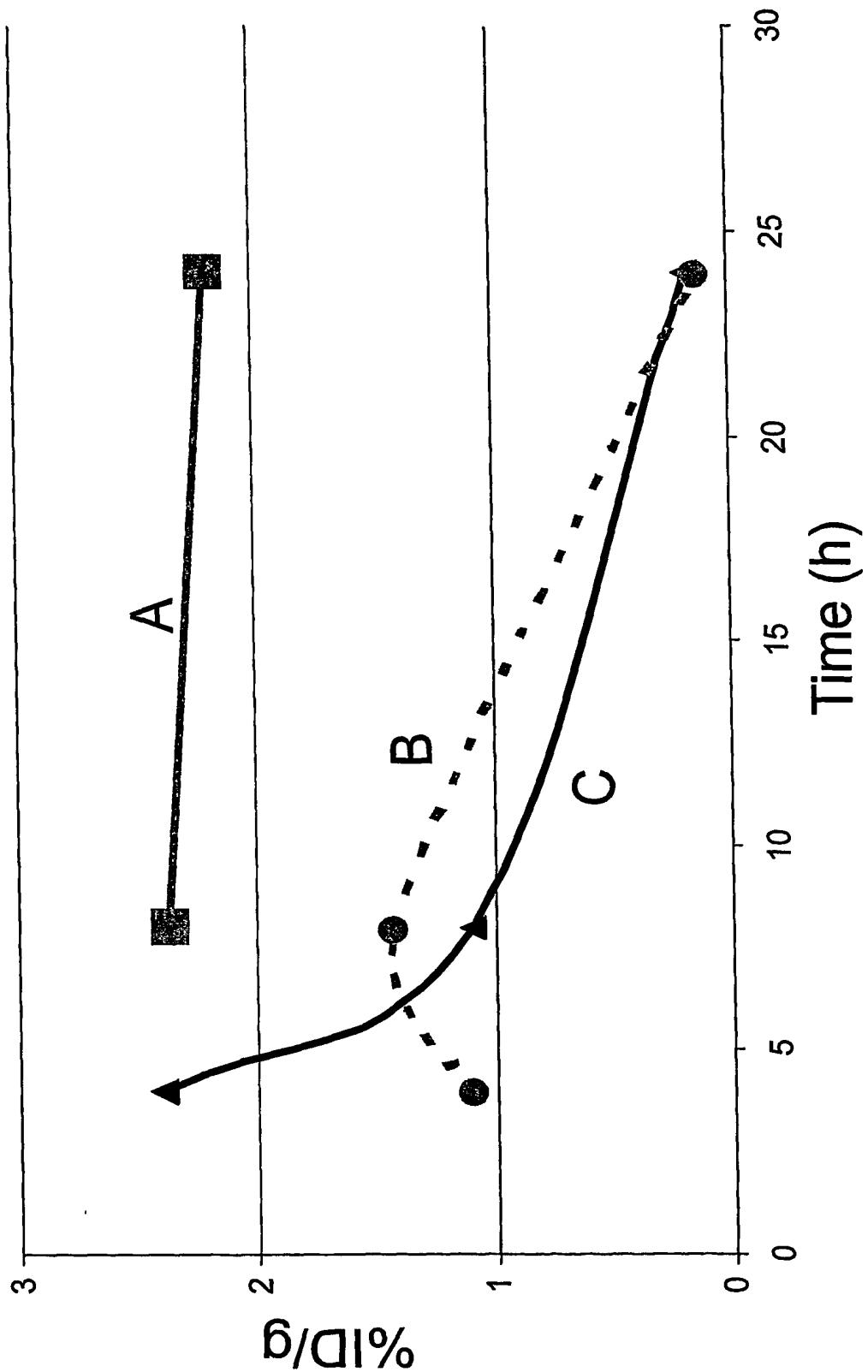
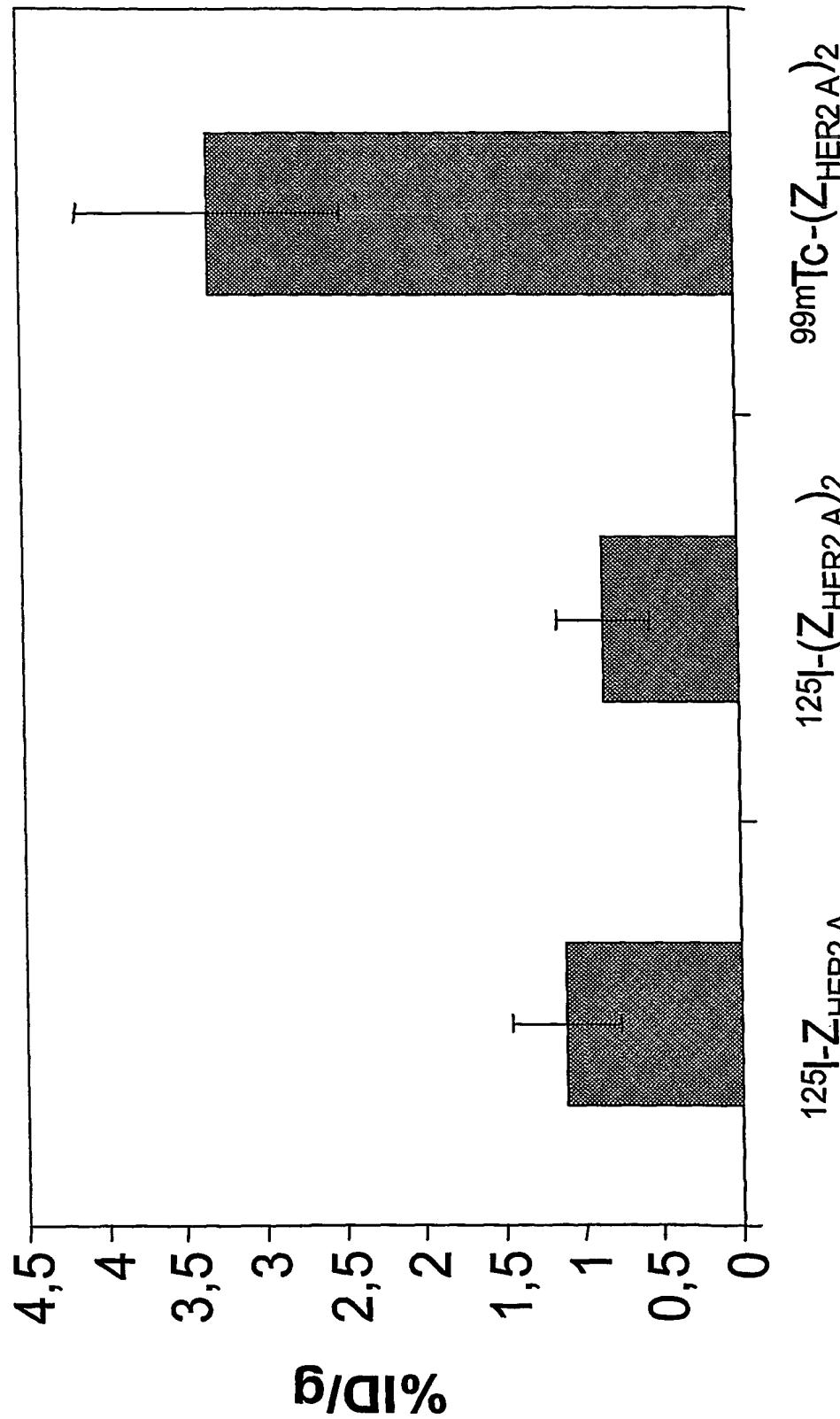


FIGURE 24

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Tumor uptake at 8 h pi**FIGURE 25**

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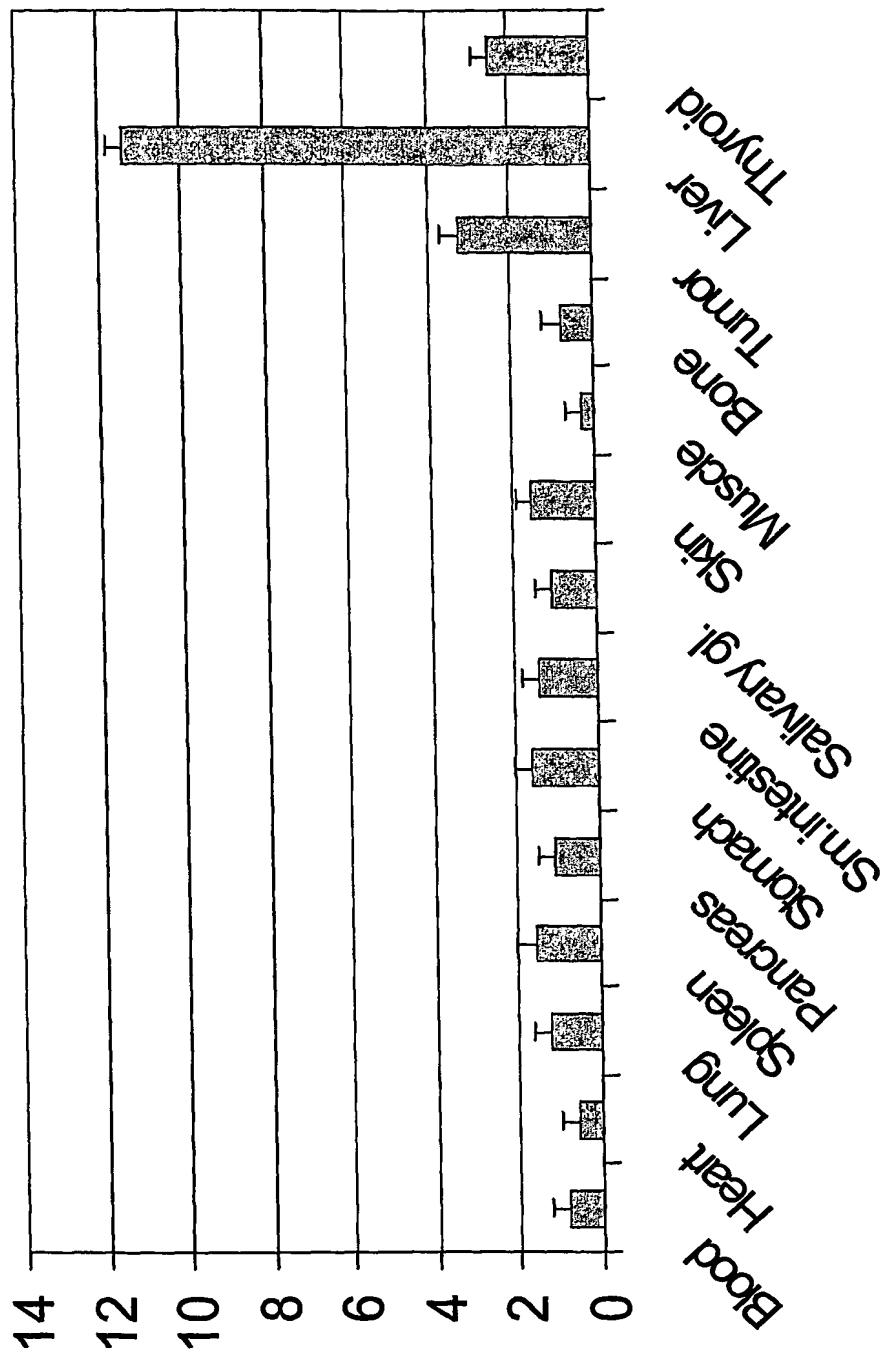
 $^{99m}\text{Tc-(Z}_{\text{HER2 A}}\text{)}_2$, 8 hours

FIGURE 26

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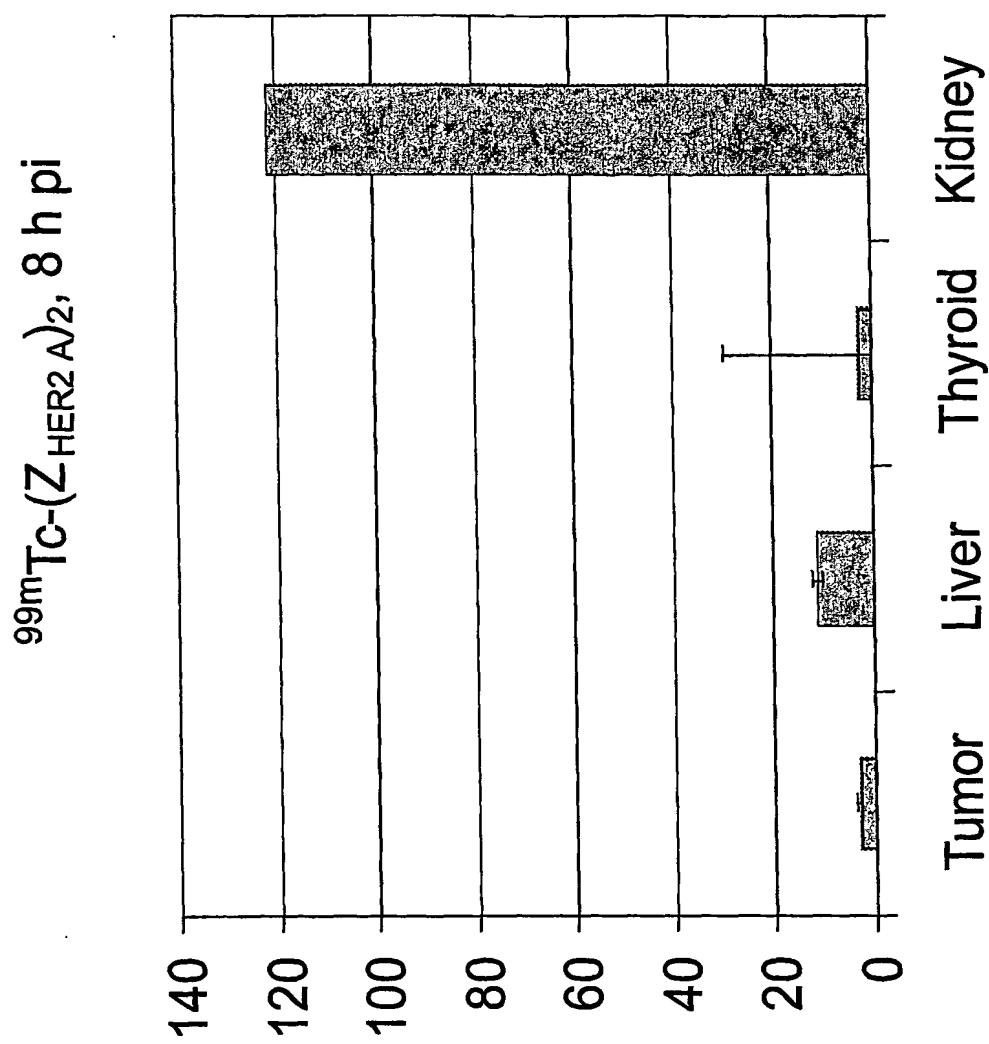


FIGURE 27

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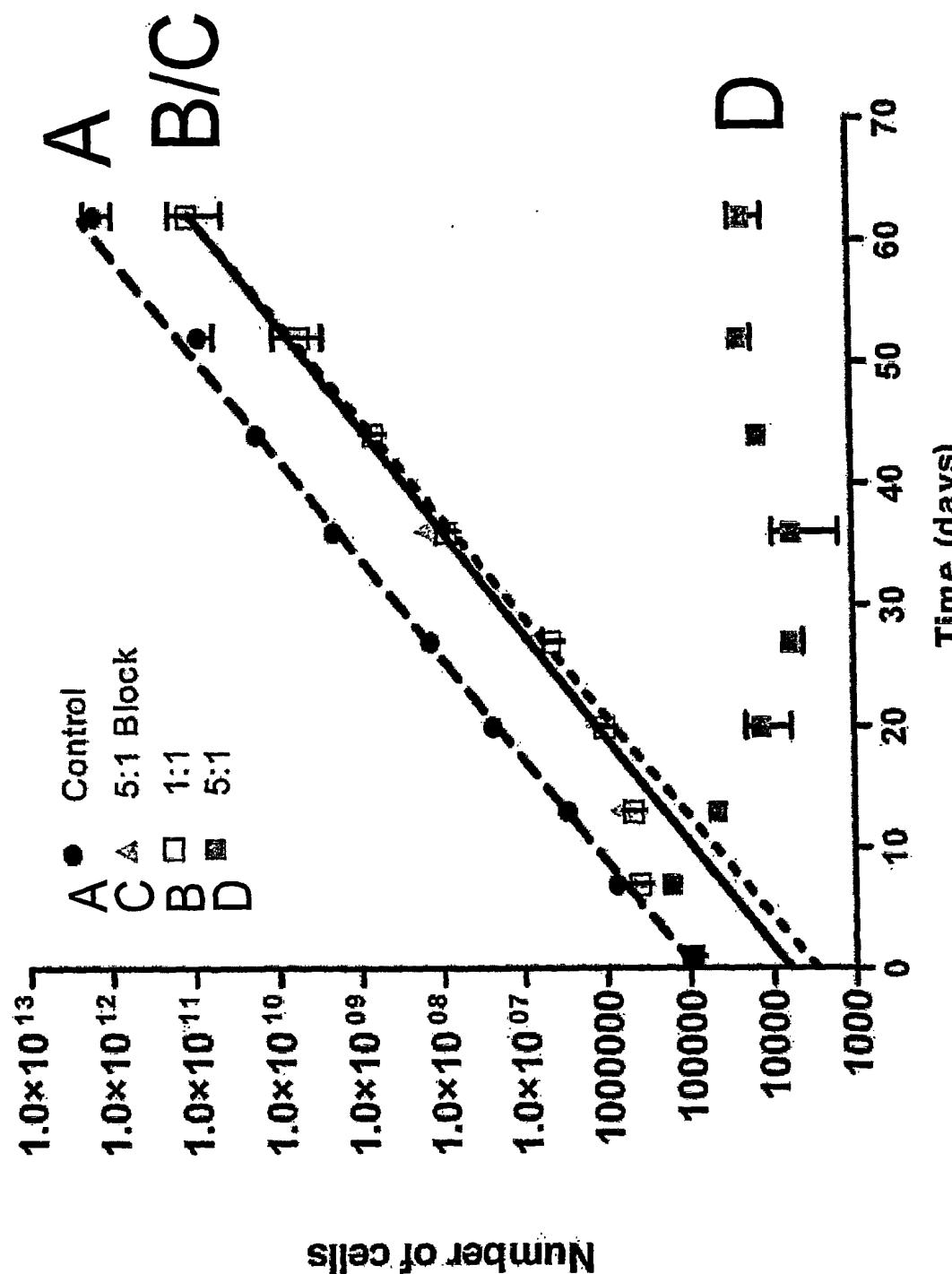


FIGURE 28

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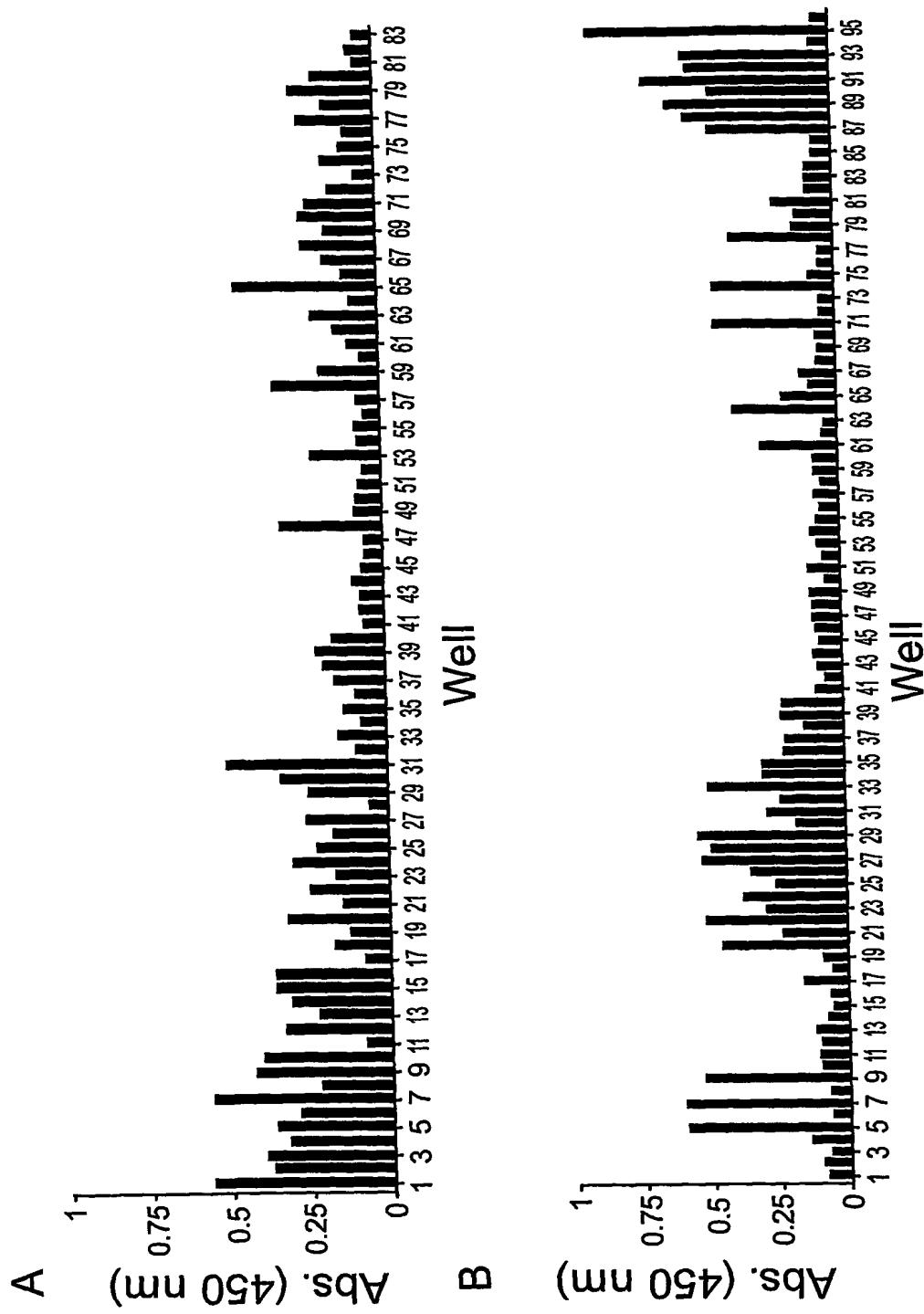


FIGURE 29

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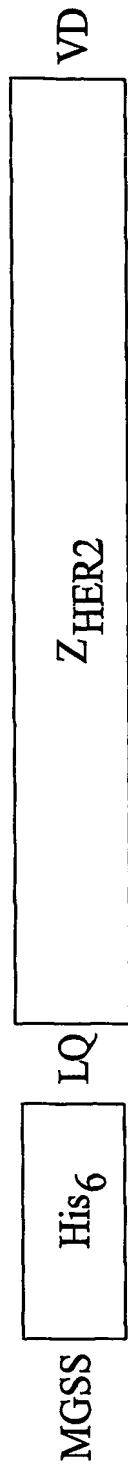


FIGURE 30

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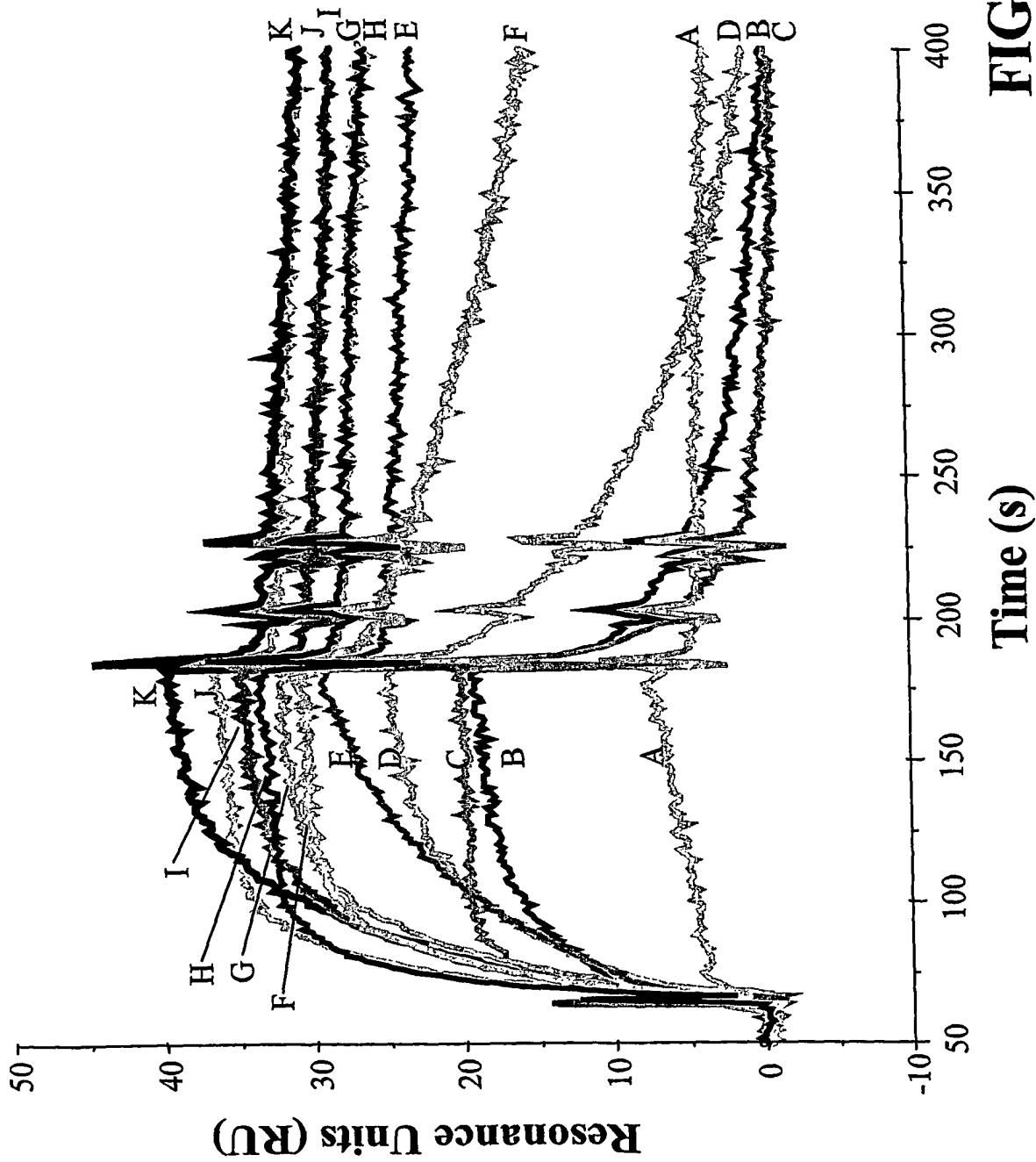
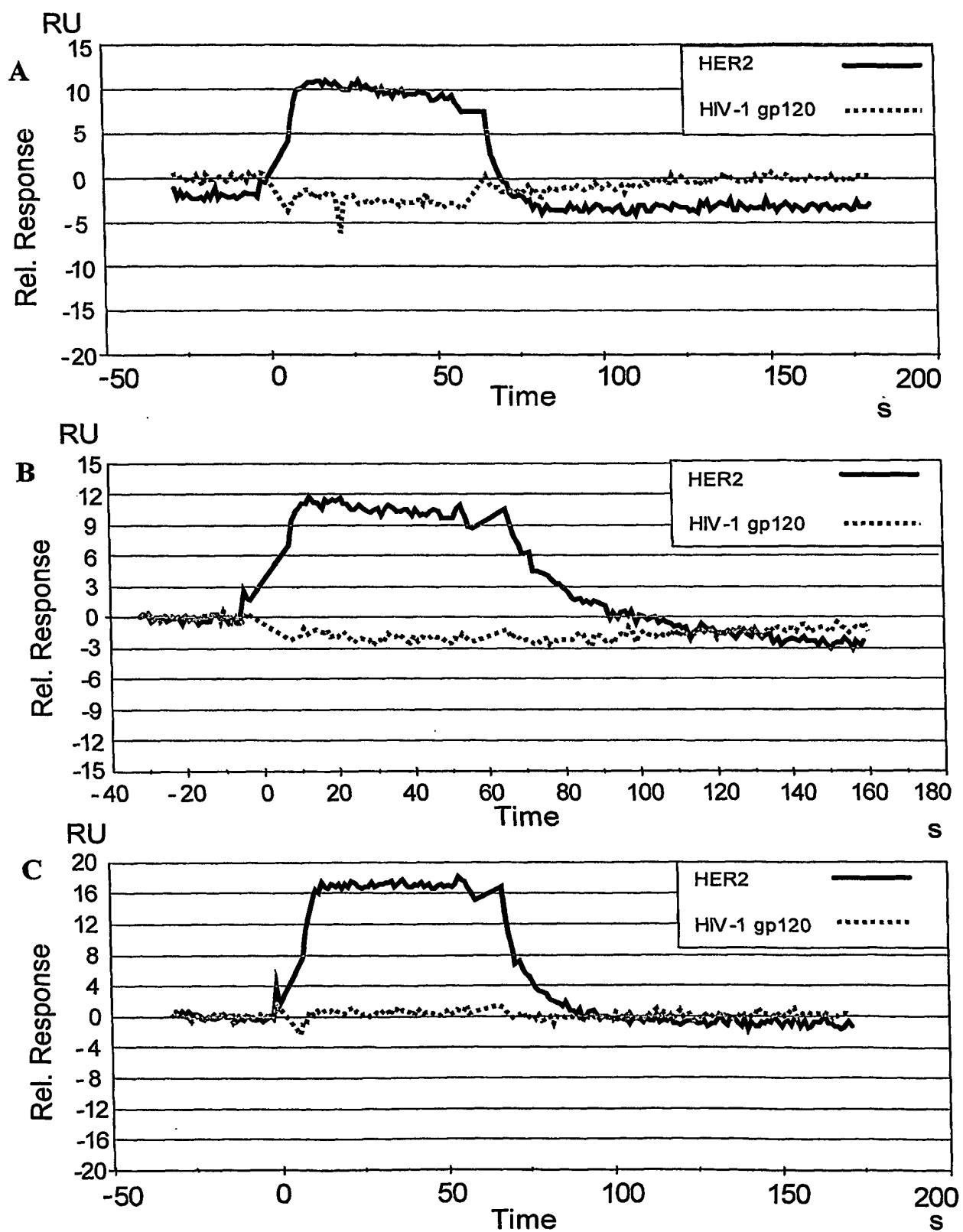


FIGURE 31
Time (s)

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FIGURE 32

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